Land O'Lakes / Zambia

Title II Development Activity Program
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Fiscal Year 2005 Results Report

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List of Acronyms

G	Goal
FY	Fiscal Year
FFP	Food for Peace
IPTT	Indicator Performance Tracking Table
IR	Intermediate Result
LOA	Life of Activity
LOL/Z	Land O'Lakes/Zambia
PLWHA	People Living with HIV/AIDS
MCC	Milk Collection Center
SO	Strategic Objective
UHT	Ultra High Temperature
ZACA	Zambia Agricultural Commodity Agency

1.0 INTRODUCTION

The results in this report refer to the objectives and activities carried out by Land O'Lakes/Zambia (LOL/Z) during the period October 1, 2004 – September 30, 2005. During this period, Land O'Lakes intensified the implementation of activities aimed at reducing food insecurity among vulnerable populations through dairy development activities. A total of 1,239 households directly benefited from the program during the period under review. Of these, 29 percent were female-headed households. Program interventions are channeled through select farmer groups at one level and through processors at the next level along the value chain. The need to have a secure market for the raw milk that smallholder producers supply is important to their livelihood because it is the means by which they earn an income to improve their food security situation as well as cope during times of dire need.

Program activities are aimed at addressing the access element of food security by providing vulnerable households an opportunity to have a stable and sustainable income through dairy production. In order for smallholder producers to have sustainable incomes, and ultimately be food secure, both the milk demand and supply sides have to be addressed. With 40 percent of all rural households being net purchasers of staple food in any given year (mainly due to low productivity even in good-harvest years)[1], increasing incomes of these households is one of the most effective ways of addressing their food security. The program components—Dairy Livestock Development, Dairy Industry Development, Marketing and Warehouse Receipt System—were therefore interlinked to achieve food security for rural households participating in the program.

In order to meet FFP's food security requirements, in FY 2005 Land O'Lakes reviewed its food security targeting criteria and endeavored to only work with households that met the food insecurity criteria set by the program (see Appendix A for the Food Security Strategy Paper).

1.2 Dairy Livestock Development

The strategy of the dairy development component is to build capacity within vulnerable populations to reduce food insecurity through dairy and livestock production. Due to the variability of rainfall within Zambia, which is concentrated between December and March, food insecurity during this "hunger period" is at its peak. However, milk production for smallholder farmers is highest during this hunger period, as green grass for pasture is abundant. Consequently, dairy production can assist greatly in reducing food insecurity during this stress period.

The Land O'Lakes intervention has been targeted at appropriate knowledge transfer through group training of farmers and building capacity within the local extension services to provide community based technical assistance. Successful targeting is determined by the adoption rates of dairy production by smallholder farmers, which has been exceptional to date.

[1] Michigan State University, Food Security Research Project, 2003.

Technical training and knowledge transfer include dairy husbandry, clean milk production, forage and dual/multi-propose crop production and animal health, amongst others. Other activities have included distribution to vulnerable households of exotic higher potential dairy breeds, which are suitable for Zambian conditions, and an artificial breeding program.

1.3 Dairy Industry Development

In order to ensure a secure market for the raw milk produced by the program beneficiaries, the program will continue to provide technical assistance to the Milk Collection Centers (MCCs), which were established to assist smallholder farmers access to a stable market by bulking their raw milk to consumers and dairy processors. Land O'Lakes also will continue to work with dairy processors that purchase smallholder farmers' milk from MCCs with the aim of improving capacity utilization and hygiene and food safety as well as developing new products. Ultimately, smallholder farmers will benefit from the steady, yet growing, market demand for their produce. For example, Land O'Lakes facilitated the formalization of purchase agreements between MCCs and dairy processors.

1.4 Promotion of Dairy Products

With Zambia's per capita milk consumption currently at 16 liters, far below the FAO-recommended 45 liters per person per annum,[2] dairy production in the country has a potential to grow and become an economic mainstay for most vulnerable households in the countryside, who have been agro-pastoralists for generations. Increased commercial sales and consumption of milk results in a greater demand on the part of the dairy processor for the raw milk, and they are more interested in purchasing it from smallholder farmers. When these farmers sell milk to dairy processors, they get better prices than they would selling it within their community. This leads to increases in the incomes of smallholder farmers and supports their efforts to feed their families.

On the other hand, milk is an essential part of a diet and has nutritional benefits to specific categories of people like pregnant and lactating mothers, people living with HIV/AIDS (PLWHA) and youth. From this point of view, Land O'Lakes embarked on campaigns aimed at increasing consumption of milk for these groups of people. In particular, training sessions were held at Government Clinics for lactating mothers and PLWHA, outlining the health benefits of consuming milk for these particular groups. Middle and high school level youth were targeted through a Youth Life-Skills Program in which HIV/AIDS and nutrition messaging was integrated into the dairy product promotions.

1.5 Warehouse Receipt System

Most rural households embark on several livelihood strategies in order to meet their food security needs. For instance, households participating in the Land O'Lakes Dairy Development Program are also crop producers. Approximately 60 percent of the

[2] Martha Cashman, Market Channel Development for Zambia Dairy Industry, December 1999.

country's staple food, maize, is produced by rural smallholder farmers.[3] The Warehouse Receipt System was initiated by USAID/Zambia and aims to ensure that producers get competitive prices for their crop by enabling them to store their produce until the market is favorable. The program is currently being administered by the Zambia Agricultural Commodity Agency (ZACA). Smallholders tend to market the bulk of their crop in the immediate post-harvest period, their decisions to sell being dictated by the need for cash rather than whether or not prevailing prices are remunerative. They cannot sell in the more formal markets due to volume constraints and quality variability, which leads to their crop being significantly discounted when sold to local middlemen. Quality analysis is usually by sight and is highly subjective. Depositing produce into the ZACA-certified warehouse makes the commodities more marketable as a result of the receipt, providing identity, guarantee of minimum quality levels, safekeeping in a professionally managed warehouse, accessibility to easy movement and transport. Enabling smallholder farmers' access to the Warehouse Receipt system helps reduce the marketing problems they face and make it possible for them to earn more for their crop. This is because the system makes it possible for farmer groups to bulk their crop into economic lot sizes that can be sold further down the marketing chain to processors.

2.0 ANNUAL RESULTS

The results achieved during FY 2005 are highlighted below by program component. Due to inconsistencies found in the baseline data used to define the IPTT baseline values and annual targets, Land O'Lakes has adjusted both the baseline values and annual targets for various indicators. A rationale for each change made is provided in the Proposed Revisions to the IPTT Justification Document attached (see Appendix C). A more comprehensive review of the program's food security impact will be provided at mid-term and final evaluations. However, an indication of the program's progress toward achieving food security and increased income is given below.

G1 Reduction in Food Insecurity

This indicator is to be measured at mid-term and final evaluations.

Goal: *Reduction of food insecurity among vulnerable populations*
Beneficiaries: *1,239 direct and 2,478 indirect households*[4]

During the 2004/2005 agricultural season, Zambia experienced extremely poor rainfall distribution, which resulted in a significant loss of crop harvests for most smallholder farmers in the countryside and left 118,000 households in need of food assistance due to crop failure.[5] The southern part of the country was the hardest hit, with certain farmers in these areas reporting losses as high as 80 percent of their expected harvest.[6] Land O'Lakes' intervention in FY 2005 was concentrated in the Southern Province, the area hardest hit by the drought. The program interventions were timely for select rural beneficiary households participating in the program. While in previous drought seasons

[3] Central Statistics Office, Post Harvest Survey, 2002.
[4] For every one household participating in the program, a minimum of two households had indirect economic benefits.
[5] Zambia Vulnerability Assessment Committee Report, July 2005.
[6] Ministry of Agriculture, National Crop Forecast Report, June 2005.

households have generally depended on food distribution programs, a number of beneficiaries reported having stable incomes from milk sales to fall back on and meet their household food needs. Indirect benefits also accrued in several forms to households not participating in the program. For instance, some households that lost their crop to the drought were able to sell their crop residues such as maize stocks to dairy farmers for use as animal feed.

Reducing Vulnerability Unconventionally

When Spirian Malambo lost his entire maize crop due to poor rains, he knew that he would therefore not be able to feed his household up to the next harvest in May 2006 and would have to once again rely on food aid from relief programs. "It's disgraceful for a big man like me to have to rely on external food assistance year in and year out, but I have no other choice since it looks like these poor rain conditions are here to stay," lamented Malambo. He was therefore greatly relieved to learn that he could sell his crop residues as animal feed to his neighbors participating in the Land O'Lakes Dairy Development Program. "I sold the dry maize stalks from my un-harvested field to two of my neighbors who are Land O'Lakes beneficiaries, and with the money they paid me, I bought two bags of maize. I reserved one bag for home consumption and decided to take the other bag to the shores of the Kafue River to exchange for fresh fish from the fishermen. I brought the fish to the main road, and motorists from Lusaka bought it all without even negotiating the price downwards! I couldn't believe my luck! Suddenly I had enough money to buy two more bags and once more had it exchanged for fresh fish to sell. I hope to earn more money from selling fish before the seasonal fish ban comes into effect in December. Then I can buy enough maize to last my family up to next May when we harvest our own maize."

SO 1. Increasing incomes of vulnerable households

This indicator is to be measured at mid-term and final evaluations.

In line with FFP's emphasis on reducing food insecurity on a more sustainable long-term basis, Land O'Lakes' interventions promote self-reliance and empowerment of households that are perpetually vulnerable to recurrent risks to their livelihoods. The rationale is that, by giving these households an alternative source of livelihood, they will be able to cope with the effects of natural shocks such as droughts, which threaten their food security situation almost every agricultural season. Once trained and given a dairy heifer, when faced with such shocks as drought, these households will not resort to survival strategies like selling their productive assets, such as a plough, that would have a negative impact on their food security status in the long term. Hence, Land O'Lakes firmly believes that by giving vulnerable households an opportunity to earn an income, the program enables them to be self-reliant and withstand the effects of shocks that threaten their livelihoods.

A Preliminary Assessment conducted in August 2005 to establish the program's impact thus far showed an increase in the average monthly household income from dairy for program beneficiaries from US$5.51 before Land O'Lakes intervention to US$49.27 soon after they received their improved dairy animals from the program and started delivering

milk to the MCC[7] (see Appendix B). The assessment found that most of these households had been beneficiaries of food distribution programs in previous years but were now able to purchase their own food. The exceptional success in increasing the gross incomes of rural households can be attributed to capacity building, training, and technical knowledge transfer. The assessment also established that farmers could have obtained more income had it not been for poor water availability for the animals during the drought.

Due to the amount of work involved in dairy production, some farmers were able to hire the services of non-participating households in the form of cutting grass for fodder, milking, building milking parlors and delivering milk to MCCs. These examples of economic activity demonstrated that the monetary benefits accruing from the program spilled over to households not directly benefiting from the program.

Food Security Through Milk Sales

Joseph Moono started participating in the Land O'Lakes Dairy Development Program in June 2004. After undergoing intensive training in various aspects of dairy production and management such as animal husbandry, health, nutrition, record keeping, milk production and handling, he received an in-calf heifer from Land O'Lakes in March 2005. Two months later, the calf was born and his heifer started giving him milk which he was able to sell to the MCC he belonged to. "I couldn't believe the amount of money I received from the MCC after delivering milk for just one month! I literally moved from having no income to making an average of ZMK180,000 ($40) per month. The change in my household feeding habits was instant. Suddenly my children were able to have a meal in the morning, in the afternoon and in the evening. This assistance from Land O'Lakes has been very timely, as you can see my family is expanding, says Joseph standing in front of his destroyed maize field with his pregnant wife and children. "If we didn't receive a cow from Land O'Lakes, I would have had to engage in casual labor just to feed my family." His wife added that their household's nutrition actually started to improve the first day their heifer gave them milk; in fact, two days later they had sour milk which has been an integral part of the children's diet since. "When I went for review at the antenatal clinic, the nurse was surprised at how healthy I looked compared to my previous review," says Mrs. Moono.

2.3 Dairy Livestock Development

Objective: *Increased incomes for smallholder dairy farmers through increased incomes from dairy production*

IR 1.1 Increase in milk produced by smallholder farmers

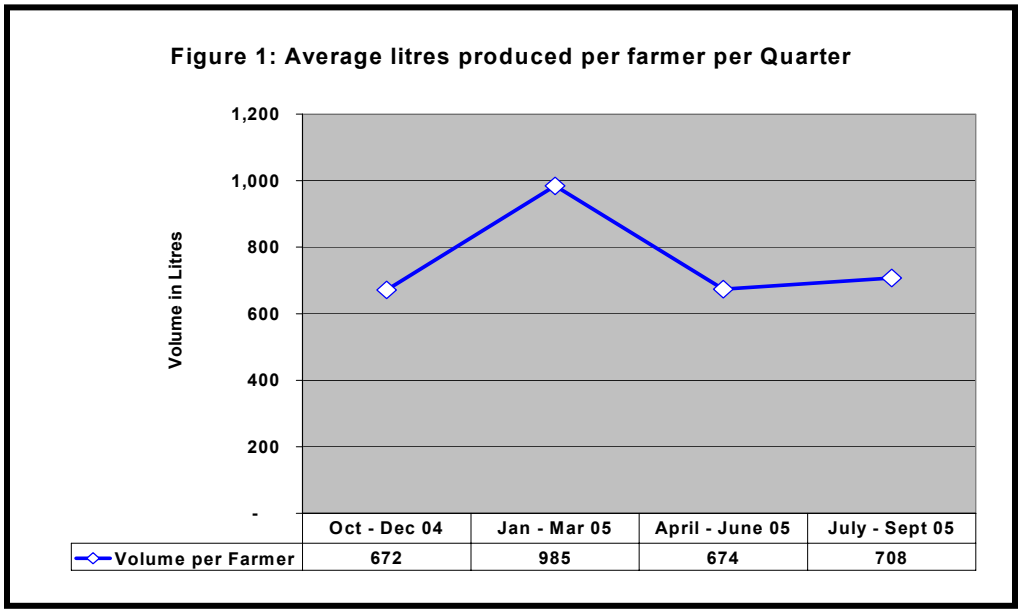
***Target**: 2,888 liters of milk per household per annum*
***Actual**: 3,038 liters of milk per household per annum*
***% of target achieved**: 105%*

During the period under review, most of the program interventions were concentrated on increasing the amount of milk that smallholder farmers participating in the program could produce. By the end of the fiscal year, average production had reached 3,038 liters,

[7] Land O'Lakes Preliminary Assessment Report, September 2005.

superseding the target by 5 percent. This achievement can be attributed to the implementation of such activities as animal health and nutrition training, on-farm General Dairy Husbandry, distribution of pasture seed, and improved dairy animals and pasture establishment and management.

By end of the period under review, a total of 775 farmers had undergone various types of training in animal nutrition including forage establishment, and by August 2005 the adoption rate of the training was reported at 85 percent, with most farmers establishing and conserving feed for their animals. Most of the beneficiary farmers started reporting a slight increase in milk production during the last quarter of FY 2005 when Land O'Lakes interventions started to show results. This is different from the norm, as usually milk production declines dramatically in the last quarter, as the dry season limits water and fodder availability. This increase was a direct result due to the program technical assistance and beneficiaries' adoption of the training.



IR 1.2 Increase in average yield of dairy cattle

Target: *6 liters per cow per day*
Actual: *4 liters per cow per day*
% of Target Achieved: *67%*

In order to enable the farmers to monitor their cows' yield on a daily basis, a Record Keeping and Management Module was added to their training schedule. In cases where the household head was illiterate, a household member or a relative was trained to assist with the recording. Record Keeping training was only conducted during the second quarter of the year, and thus recording only started in earnest in March 2005. And late distribution of animals due to disease outbreak also affected yield. Hence results reported under-represent the average yield per day for the fiscal period under review, for which the target had been set at six liters.

Nonetheless, during FY 2005, Land O'Lakes worked diligently with beneficiary farmers to increase their dairy animal productivity. Table 1 below gives an indication of the average liters per day produced in FY 2005 according to the breed of the animal. Before Land O'Lakes intervention, smallholder farmers owning one or two traditional animals did not see the benefit of milking these animals because yields were as low as 0.5 liters per day. In essence, these animals became a burden to their owners who were struggling to feed their households, let alone the animals. But with improved management and feeding promoted by Land O'Lakes, most farmers saw a marked increase in the amount of milk their traditional animals were producing per day. An average yield of 4 liters per day was recorded by the end of FY 2005. The breeds distributed by Land O'Lakes reported yields as high as 7 liters per cow per day, giving beneficiaries enough milk for both sales and home consumption.

Table 1: Milk Yield by Type of Animal

Breed Type	Liters Per Cow Per Day
Exotic	7
Exotic Cross	4
Traditional	2
Average	**4**

IR 1.3 Number of smallholder farmers owning improved dairy cattle

Target*: 250 farmers*
Actual*: 204 farmers*
% of target achieved*: 82%*

With the objective of improving productivity through improvement of the genetic potential of dairy animals owned by smallholder farmers, the program set out to distribute improved dairy animals to 250 vulnerable households and implement an Artificial Insemination program in FY 2005. Despite a delay in distribution due to the government disease control ban on cattle movement, the program was able to distribute the intended 250 in-calf heifers to 204 households. In some cases, households received more than one cow due to the large household size and large dependency ratio. Of these recipients, 30% were female-headed households.[8] Through the pass-on calf subprogram, the recipient farmers are mandated to pass on the first female calf born of the donated heifer to other vulnerable households in the community, thus expanding the program's outreach within the communities.[9] Although the artificial insemination (AI) got off to a late start due to initial poor reception by the farmers, by September 2005, 117 farmers had benefited from AI services. The number of farmers whose animals confirmed pregnant was 132, and these calves will start to be born in November 2005.

Coping with Food Insecurity

[8] Of the households who received cows, 30% were female-headed households; however, of the total program beneficiaries, 29% of households were female-headed.
[9] Pass-on calf criteria are outlined in the Food Security Strategy Paper in Appendix A.

Mavis Simbotwe belongs to the Sikaunzwe Dairy Farmers Association. She is one of the households who received a dairy animal from Land O'Lakes. Mavis has 4 young children and looks after 3 orphans and her aged mother, increasing her household to seven. Her older children and dependents had to drop out of school so that they could help her earn money for food by selling wild fruits at the roadside. The money they make enabled them to buy a 2.5-kg bucket of maize meal every evening. Mavis intends to send the children back to school in 2006 because the household now has an income from the milk sales thanks to the heifer. With the extra income, she can also purchase additional food for the household. "We can now afford a 50-kg bag of maize, which is what I require to feed my family. And the children now consume milk every day," Mavis said.

IR 1.4 Number of smallholder farmers trained

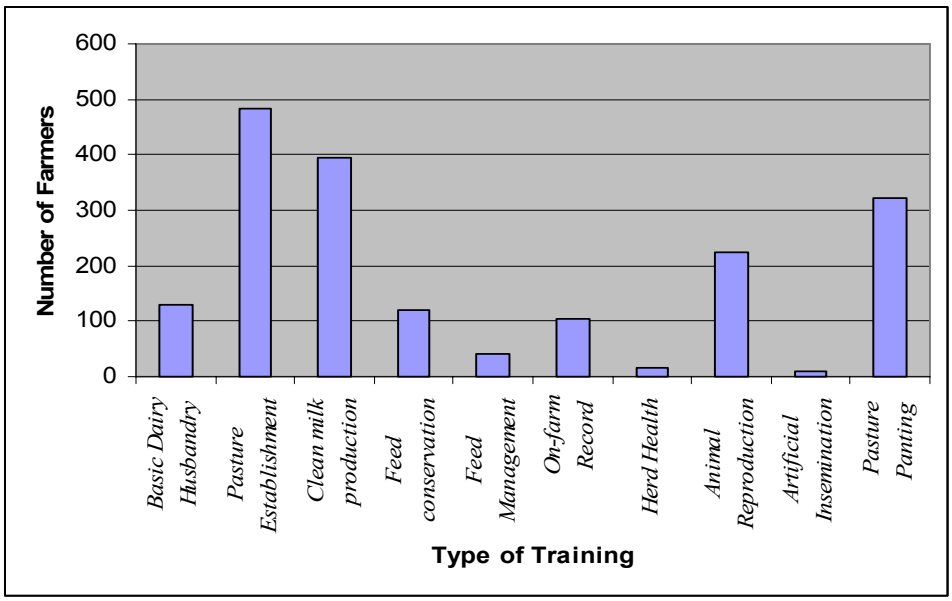
***Target**: 600 farmers*
***Actual**: 775 farmers*
***% of target achieved**: 129%*

Training for technical knowledge transfer is the main medium of intervention that Land O'Lakes uses to improve the capacities of the farmer groups working with the program. Most of the success in making a difference in beneficiary households' lives can be attributed to the trainings the program held for farmer groups. Technical support and farmer exchange visits were also undertaken in order to improve the adoption rates of recommended activities. For FY 2005, Land O'Lakes targeted to train 600 smallholder farmers. By the end of this period, a total of 775 households had received training in Dairy Husbandry and On-farm Record Keeping and Animal Reproduction. This was often due to the fact that more than one member of each household attended the training sessions. According to the Preliminary Assessment report, an average of 85 percent of farmers adopted various recommendations made in the training sessions conducted in FY 2005. This shows that the targeting of the training is appropriate. Figure 2 below shows different types of training sessions held during the period under review and the number of farmers benefiting from such trainings. Farmers received training relevant to the dairy production phase they are in.

Productivity Through Learning

Sipiwe Munsanje participated in the pasture establishment training sessions held by Land O'Lakes in July 2005. "Before attending these trainings, I used to let my cow move long distances in search of pasture and it was only giving me very little milk per day. I thought this was due to the fact that it is a traditional breed. But after attending the Land O'Lakes training, I started gathering the recommended grass and making hay for the animal. Now my animal gives me twice the amount of milk it used to give me before I started feeding it! When the rains come, I intend to use some of my maize field to grow fodder for my cow."

Figure 2: Smallholder Farmer Training



2.4 Dairy Industry Development

Objective: *Market linkages for smallholder dairy producers*

IR 2.1 **Value of milk sold by milk collection centers**

This indicator is to be measured at mid-term and final evaluations.

The MCCs through which the groups working with Land O'Lakes bulk their milk for the market are an important factor in the dairy value chain as they provide farmers with a ready market for their produce. During FY 2005, Land O'Lakes provided a number of technical assistance to ten MCCs, including linking them all to processors who would purchase their bulked milk and introducing a Quality Assurance subprogram aimed at improving the handling and storage of the bulked milk so it could fetch competitive prices.

The main function of an MCC is the bulk marketing of milk, allowing farmers producing relatively small quantities access to the formal market, which has the capacity to absorb the locally produced supply. Land O'Lakes provides support and technical assistance to the MCCs, which are entirely farmer-owned and managed by smallholder farmers. This technical assistance is focused on ensuring the sustainability of the business and developing the MCC into farm service centers that provide a variety of services to its members at an affordable rate. This is possible through farmers working together to obtain critical volume to allow the services to become viable. These services include marketing livestock feed, veterinary drugs, artificial insemination, cleaning detergents, extension services and access to some cash advances. The value of milk sold by the MCCs was US$408,933, of which US$375,207 was paid out to farmers. A detailed

analysis of the value of sales at MCCs will be established during the mid-term evaluation of the program.

IR 2.2 **Average volume of milk sold by milk collection centers**

***Target**: 257, 700 liters per annum per MCC*
***Actual**: 202, 800 liters per annum per MCC*
***% of target achieved**: 79%*

During the period under review, 2,028,000 liters of milk were sold by the MCCs. This is below the target that was set at 2,577,000 liters. Since 73 percent of the milk delivered to MCCs was sold to processors through supply contracts between the producer groups and the processors, certain quality standards were required for accepting the milk. For example, several quality problems with raw milk resulted in suspension of supply contracts for MCCs delivering milk to Finta over the last six months, creating significant problems for marketing of raw milk. Hence, milk delivered to MCCs supplying to Finta were halted until these standards were met. As a response, Land O'Lakes designed a Quality Assurance subprogram for the MCCs, which was implemented in the last quarter under review resulting in improvements of raw milk quality and hence the resumption of milk delivery of at least two MCCs. Raw milk sales to local markets continues to be an area of concern for Land O'Lakes, particularly issues surrounding food safety. Processors demand a higher level of quality to ensure consumer safety. It is sometimes difficult for MCCs to meet those standards as many farmers are delivering milk through the formal market channels for the first time.

Milk sales are expected to go up in FY 2006 as more farmers participate in the program. Membership at milk collection centers increases as the number of farmers owning cattle expands as a result of the Land O'Lakes stocking program.

Creating Market Linkages

Kalomo Milk Collection Center had traditionally supplied milk to a Dairy Processing plant in Livingstone District. This plant obtained a manufacturing contract with a large South African dairy processor who required certain standards to be met, and the plant subsequently stopped accepting the milk from the MCC. Land O'Lakes constituted a Quality Assurance subprogram for the MCC and its farmer members so that the quality of their raw milk could meet the new standards. Furthermore, Land O'Lakes facilitated the dialogue between the processor's new management and Kalomo MCC. As a result, Kalomo MCC was able to resume supplying raw milk to the processor. "We were in a desperate position because Finta Dairies was our largest market," says the MCC chairperson. "When the processor stopped receiving our milk, the income for our members drastically reduced as we had no other large market for the milk. With the knowledge and techniques Land O'Lakes has given us, we are able to access the market to sell our surplus milk."

The processors were equally as pleased. "When we had to refuse the milk from the small-scale farmers we were saddened, but we need good quality milk for our UHT processing. We felt that the smallholders could not achieve the standards required. Surprisingly and with Land O'Lakes intervention, the farmers are producing better-quality milk than that

received from large-scale commercial operations," said Vic Moita, Quality Control Consultant to the plant.

IR 2.3 **Number of smallholder farmers delivering milk to MCCs**

***Target**: 850 farmers*
***Actual**: 744 farmers*
***% of target achieved**: 88%*
This target was not achieved mainly because an outbreak of foot-and-mouth disease in November 2004 led to a government ban on cattle movement. The distribution of improved dairy animals earmarked for the first quarter of FY 2005 was thus postponed until the second and third quarters when the ban was finally lifted. As a result, milk production and sales only peaked during the last two quarters of the fiscal year. Although the number of farmers delivering milk to MCCs was below the set target, the impact at household level was huge, particularly for households that in the past would have depended on food donations.

Felicity Hazyambo is a member of the Kayuni MCC in Monze district. She looks after a household of 13. She received a pregnant heifer from Land O'Lakes in July 2005 and in the following month she earned $95 from the sale of milk. "My household usually depends on its own maize production for food, but for the past few years the rains have been poor and I have been struggling to feed my household," says Felicity. "But with this help from Land O'Lakes, I don't have to worry about how our maize crop performs anymore because I can now afford to buy maize from the market and give my family decent meals every day. "

IR 2.4 **Volume of milk used by processors to produce dairy products**

***Target**: 10% increase*
***Actual**: 21% increase*
***% of target achieved**: 210%*
The number of processors within the country has increased due to high demand for dairy products, especially in value-added products that are normally produced by small and medium enterprises. This indicator is used to measure the seventeen main processors who belong to the Zambia Dairy Processors Association, and they account for 90 percent of the formal milk market. Land O'Lakes technical assistance to the processors has allowed these processors to take in more milk from producers, hence assuring a market for the smallholder producers. Technical advice on such things as quality assurance and general management practices has assisted the processors to compete with imported products on quality and price.

IR 2.5 **Capacity utilization of dairy processors**

***Target**: 29%*
***Actual**: 31%*
***% of target achieved**: 110%*
The capacity utilization of dairy process has increased from 25 percent to 45 percent due to many factors stated above and also with the technical assistance provided by Land O'Lakes. This has allowed the processors to effectively utilize their plants.

2.5 Improved Storage for Non-perishable Commodities

Objective: *Improved storage for non-perishable agricultural produce*

IR 3.1 **Increase in commodity receipts used as collateral**

This is an impact indicator that will be measured in the final evaluation.

On average, smallholder farmers who made deposits into the warehouse receipts program obtained US$180/MT for maize as a result of utilizing the warehouse receipts program. However, at the time of deposit, they would have only received US$125/MT on the market. Thus smallholder farmers netted an additional US$55/MT on their maize crops by using the warehouse receipts system. In addition, banks financing against warehouse receipts reported impressive performance for smallholder farmers. It is likely that the high prices they received for their maize helped ensure that most of their loans would be repaid on time. The few delays encountered were attributed to delayed payments from the buyers.

IR 3.2 **Increase in quantity of commodities deposited into certified warehouses by smallholder farmers**

***Target**: 5,000 MT*
***Actual**: 3,654 MT*
***% of target achieved:** 73%*

The poor rainfall experienced during the period under review cast serious doubts on the levels of deposit expected for the 2005 marketing season. The country recorded a maize deficit of 85,000 MT at the beginning of the marketing season[10] and by September 2005, the Government was projecting a 200,000 MT maize deficit and was planning an import program. The deficit resulted in selling by nervous local producers while the proposed importation of maize was expected to lower local market prices. Both scenarios were catalysts for reduced incentives for using the warehouse receipt system during the fiscal year under review.

With the finalizing of the grading standards for groundnuts, sorghum and sunflower during the period under review, it is expected that many more smallholder farmers will participate in the program because these crops are predominantly grown by smallholder farmers. Since the marketing activities and volumes of these crops are very limited, ZACA will attempt, in promoting these crops under this component, to stimulate and increase demand for these crops from industrial users. For instance, the largest brewery in the country, National Breweries, uses imported sorghum and has indicated intentions to shift to sorghum as a major ingredient, instead of maize. This could generate greater incentives for farmers to diversify away from maize to sorghum.

[10] Ministry of Agriculture, National Crop Forecast Report, 2005.

IR3.3 **Number of smallholder farmers trained**

***Target**: 2,200*
***Actual**: 3, 569*
***% of target achieved**: 162%*

In FY 2005, 2,200 smallholder farmers in ten rural districts were targeted to be introduced and trained regarding the Warehouse Receipts subprogram. A total of 62 smallholder farmer training sessions were held in eight of the ten targeted districts. Six other districts were included on the list during the course of the year, due to their proximity to the targeted areas, the fact that some farmer groups in the same areas as the target groups wanted the opportunity to participate in this activity, and as a result of expanded efforts to identify eligible farmers. Hence, the interest shown by non-members in the non-targeted areas necessitated the delivery of additional training sessions in other areas. Most of these joined existing groups, but in cases where they formed new ones, additional support was provided as well as group development.

3.0 Monitoring & Evaluation, Audits and Studies

A Preliminary Assessment report was conducted in September 2005 that presented a snapshot of the initial impact the program is having on its beneficiaries, especially in light of the current drought. The report concluded that the program has made positive impact on a number of households. For example, they are able purchase additional food, families have access to milk, and households were able to cope with the ongoing drought. See Appendix B for the full report.

LAND O'LAKES

ZAMBIA

TITLE II DEVELOPMENT ACTIVITY PROGRAM

APPENDIX A

FOOD SECURITY STRATEGY PAPER

(Provisional)

APPENDIX A

TABLE OF CONTENTS

ABBREVIATIONS

CSO	Central Statistics Office
FSC	Food Security Committee
LOL/Z	Land O'Lakes/Zambia
FFP	Food for Peace
IR	Intermediate Result
PLWHA	People Living with HIV/AIDS
VAC	Vulnerability Assessment Committee

APPENDIX A

1. EXECUTIVE SUMMARY

This provisional paper seeks to provide a guide on how Land O'Lakes/Zambia (LOL/Z) will address issues of food security in the implementation of its Dairy Development Program. LOL/Z is implementing a 5-year USAID-funded PL480 Title II Program that aims to reduce food insecurity among targeted rural populations through dairy development. The program will contribute to the results of USAID/Food for Peace's Strategic Objective of "*Food insecurity among vulnerable populations reduced*".

With this overall goal of reducing food insecurity among vulnerable populations, LOL/Z is mandated to assess and understand household food insecurity for geographical and population-based targeting of its program activities, to detect changes in household food insecurity situations over time and to monitor and evaluate the impact on household food insecurity situations due to program intervention. It is thus hoped that by focusing program activities according to the guidance provided in this paper, the program will increase its impact in addressing food insecurity in LOL/Z program areas. The program remains committed to reviewing food security issues on an on-going basis in order to stay up-to-date in addressing the issues, and continually improve program effectiveness.

One of the primary causes of food insecurity among rural communities in Zambia is over-dependence on staple food production stemming from lack of economic opportunity to obtain sufficient income to purchase the main staple food[1]. LOL/Z's primary approach to reducing household food insecurity is to improve smallholder households' *access* to food through increased incomes derived from participation, directly and/or indirectly, in its dairy development program. The program will also increase access to milk in households receiving dairy cattle, and increase the availability of milk at a community level through inter-household sharing, informal sales, or via sales at established milk collection centers. The program endeavors to work with food insecure communities (and households within them) in the selected program areas.

In order to improve food security targeting, the program will at all times attempt to target groups and households on average with less than six months of adequate household food provisioning (MAHFP). This targeting mechanism is the foundation of the program's selection criteria because it would ensure that the beneficiaries are the more vulnerable people of the community.

In an effort to improve food security of not just the program participants but of the community at large, LOL/Z will undertake to build capacity of farmer[2] associations for the adoption of economic activities around the dairy program aimed at benefiting other vulnerable farmers in the community that are not participating in the program.

[1] CSO, 2000.
[2] "Farmer" is defined as someone who cultivates and keeps livestock.

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Economic activities, such as fodder collecting, milking, transporting milk and shed building, will spread the program benefits to other vulnerable farmers in the community through LOL/Z direct beneficiaries.

This paper is designed to provide guidance to LOL/Z field staff on how best to achieve food security in a dairy development program. This strategy anticipates assisting LOL/Z field staff in targeting as well as monitoring and evaluation of the food security aspect of the Title II program.

Note that there are important aspects of this program that are not currently addressed within this paper. These relate to the work that Land O'Lakes is undertaking to improve dairy processing operations and the national market for milk, and to the warehouse receipts program. Both aspects of the program establish markets for small farmer produce that did not exist before. Additional strategy information will be provided on these two important aspects of the program within the final version of this document to be provided at a later date. All other information provided within this document is in final form.

2. FOOD SECURITY

According to USAID (1992), Food Security is a state in which all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life. The three elements of food security are:

> "**Food Availability** is achieved when sufficient quantities of food are consistently available to all individuals within a country. Such food can be supplied through household production, other domestic output, commercial imports or food assistance.
>
> **Food Access** is ensured when households and all individuals within them have adequate resources to obtain appropriate foods for a nutritious diet. Access depends upon income available to the household, on the distribution of income within the household and on the price of food.
>
> **Food Utilization** is the proper biological use of food, requiring a diet providing sufficient energy and essential nutrients, potable water, and adequate sanitation. Effective food utilization depends in large measure on knowledge within the household of food storage and processing techniques, basic principles of nutrition and proper child care."[3]

[3] USAID, "Food Aid and Food Security Policy Paper", (USAID, Washington, DC: 1995) 13.

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Another dimension to food security is vulnerability, which is defined as the 'inability to cope with a shock or hazard'.[4] Food for Peace's Strategic Plan for 2006-2010 places a lot of emphasis on the reduction of risk and vulnerability and thus gives added attention to crop and *income* diversification activities[5]. Title II programs operate in environments that are characterized by natural and economic challenges, which has led to an increased focus on reducing risk and vulnerability. Hence it becomes imperative to directly address the vulnerability of food insecure communities through activities that increase ability to cope with shocks.

2.1 FOOD SECURITY IN ZAMBIA

With over 75% of the population deriving their livelihoods from the land, food security in Zambia is driven by the agricultural sector, which is the second most important economic activity after the mining industry[6]. Zambia's staple food is predominantly maize; hence most of the land and resources under agriculture are utilized for maize production. Other important crops are cassava, rice, sorghum and millet. Zambia is usually considered to have sufficient availability when it has produced enough maize to meet the annual consumption requirements of its nationals. The other crops grown in the country usually complement rather than supplement the availability of maize in that they can either be sold to raise money for purchasing maize or they can be consumed with maize. However, even if adequate agricultural production levels are sufficient for assuring *food availability* at the country level, they do not guarantee that all households will have *access* to enough food. Improving agricultural productivity and increasing incomes are both critical to improving food security in Zambia.

LOL/Z seeks to improve vulnerable communities' food security through the enhancement of incomes derived from dairy production. The program's entry point of intervention is to integrate or establish farmers' associations or cooperatives[7]. These have been preferred because they offer an accessible and manageable structure that can facilitate outreach in the community.

3. LAND O'LAKES/ZAMBIA DAIRY DEVELOPMENT PROGRAM

The program's primary objective is to reduce food insecurity by improving rural communities' access to food through increased incomes. As a dairy development program, the main focus is to encourage and facilitate farmer associations' participation in dairy production and offer activities that will help diversify their food access activities. Specifically, the program works with farmer associations through which program activities are channeled. These include distribution of dairy animals, artificial

[4] Office of Food for Peace, "Food For Peace Strategic Plan for 2006-2010", (USAID, Washington, DC: 2005) 86.
[5] Ibid 63.
[6] Ministry of Finance and National Planning, "National Economic Report", (MoF, Lusaka, Zambia: 2004).
[7] There are small legal differences between an association and a cooperative. One main difference is that a cooperative is not allowed to earn a profit. LOL/Z uses both to describe a group of farmers working together to achieve a common goal.

insemination for traditional animals, establishment and support of Milk Collection Centers (MCCs) through which the farmers can access a ready market for their milk and training in various aspects of dairy production such as milking, pasture establishment, milk quality and animal health. Other training topics include cooperative development, capacity building and HIV/AIDS and nutrition awareness. In addition, by providing dairy cattle to households, the program provides a source of milk, improving household access to food, and often increasing access of other neighboring households through informal sharing, trading or purchasing. Also, fresh and relatively inexpensive milk becomes more available to the community at large when it is sold through the MCCs.

The program is currently benefiting 998 vulnerable households in five districts in Southern Province, one of the provinces most hit by the current and past droughts experienced by the country. The program also works with approximately 200 vulnerable households in the Copperbelt Province, an area devastated by the closure of the country's copper mines. Program services are currently being extended to food insecure regions in Central Province and later select districts in Eastern and Western Provinces.

The primary unit of consideration for the program is a household. Thus all technical assistance given to individual group members is assumed to be benefiting the household.

4. LAND O'LAKES/ZAMBIA APPROACH TO FOOD SECURITY

While contributing to Food For Peace's Strategic Goal, LOL/Z's food security strategy aims to specifically focus on Food For Peace's Sub IR 2.2 (*Livelihood capacities protected and enhanced*) and sub IR2.4 (*Community capacity to influence factors that affect food security increased*). The program's approach to addressing food security is at four levels:

(i) Accurate targeting of program beneficiaries so that all participating households meet the Title II 'food insecurity' criteria;

(ii) Broadening the communities' asset base by investing in various aspects of their lives so as to promote their resilience to food security risks, especially during the "hungry season" of the year, December-February. The program aims to create assets that can help households to increase their productivity and incomes and thus reduce their vulnerability to risk during the agriculture production cycle.

(iii) Use of dairy production as a *coping mechanism* against food insecurity during natural and economic shocks that create worse than normal conditions, such as recurrent droughts that reduce farmers' ability to cope from drought to drought with limited productive assets. Program interventions at this level will focus on promoting and protecting the use of dairy livestock as a coping strategy against natural and economic shocks faced by vulnerable households; and

(iv) Capacity building activities that are aimed at empowering participant communities to identify and address their own food security situations. At this

level, focus is primarily on the development of food security committees at the farmer group level through which LOL/Z provides technical support and information for the analysis and implementation of activities aimed at enhancing the community's food security, including HIV/AIDS and nutrition awareness activities.

4.1. PROGRAM TARGETING

Goal: To work with households and/or communities that meets the Title II 'food insecurity' criteria

The Zambia Dairy Enterprise Initiative (ZDEI), which LOL/Z was implementing before the Title II Program, had a strategic objective of "increasing rural incomes and private sector competitiveness in the agricultural sector". This means that the farmer selection criteria set for the ZDEI was different from the Title II criteria. LOL/Z has made many efforts to modify the targeting criteria according to Title II recommendations.

LOL/Z will select groups on average with less than six months of adequate household food provisioning as the first targeting level. For program activities, the program will select farmer groups whose member households (at least 70% of them) meet this targeting criterion. At the household level selection, a household will be selected for a donated heifer, pass-on female calf, and artificial insemination (AI) support if it meets a number of criteria listed below.[8]

Additionally, LOL/Z will participate in the Zambia Vulnerability Assessment Committee (ZVAC) to ensure targeting continues to focus on the vulnerable farmers. The ZVAC is a committee of various NGOs, Government Ministries and UN Agencies that monitor and provide assessments of the food security situation in vulnerable areas. Information coming out of this organization is usually used by food aid agencies for targeting of relief and developmental efforts. LOL/Z will be participating in the ZVAC so as to provide its expertise and information to assist in monitoring the food security situations in its program areas and to collaborate with other food security agencies in targeting of its program activities.

4.1.1 Targeting Mechanism

A household will be eligible to participate in the program if it has on average less than six months of adequate household food provisioning. This figure will be determined through a lot quality assurance sampling (LQAS) method aimed specifically to determine percentage of households with number of adequate food provisioning on a

[8] This figure is based on the program's baseline values for measuring food security as outlined in the Indicator Performance Tracking Table (IPTT). Because this indicator baseline values measure the food insecurity of the population, it is appropriate to use as our criteria for selecting program participants at the community level.

sample basis without taking a complete survey of the groups in question. LQAS will be conducted in each potential program area before program activities commence.

Number of months of adequate food provisioning provides a proxy for access to food in the household. In the LOL/Z program, the most vulnerable households achieve about six months of adequate food provisioning. As a targeting tool, this will help the program select groups whose majority members belong to vulnerable households.

LOL/Z proposes the following targeting mechanism:

A. Groups benefiting from program activities must have the following criteria:

1. At least 70% of the group members on average have less than 6 months of adequate household food provisioning

B. Households receiving dairy cattle and pass-on female calf must fit the following criteria:

1. All households targeted must on average have less than six months of adequate household food provisioning
2. Priority will be given to households meeting the following vulnerability criteria: (a) female headed households, (b) elderly or child headed households, (c) PLWHA who are well enough to own and manage dairy cattle (taking ARTs and following nutritional guidelines, participating or have participated in a care and support program), and (d) large households with high dependency ratios.
3. Households located within two hours of a Milk Collection Center
4. Have access to adequate land and/or fodder
5. Have access to adequate water
6. Household farmers are willing and able to participate in training prior to receiving a dairy animal

As illustrated below in Figure 1, LOL/Z's targeting criteria captures people from the left circle as well as the right circle. However, for those targeted to receive a heifer, pass-on female calf and/or artificial insemination (AI) activities they must meet both the left and right circles, as illustrated in the overlap area in the middle. LOL/Z will use this targeting mechanism to select groups and households who will benefit from the program main activities such as donated heifer, pass-on female calf and AI services.

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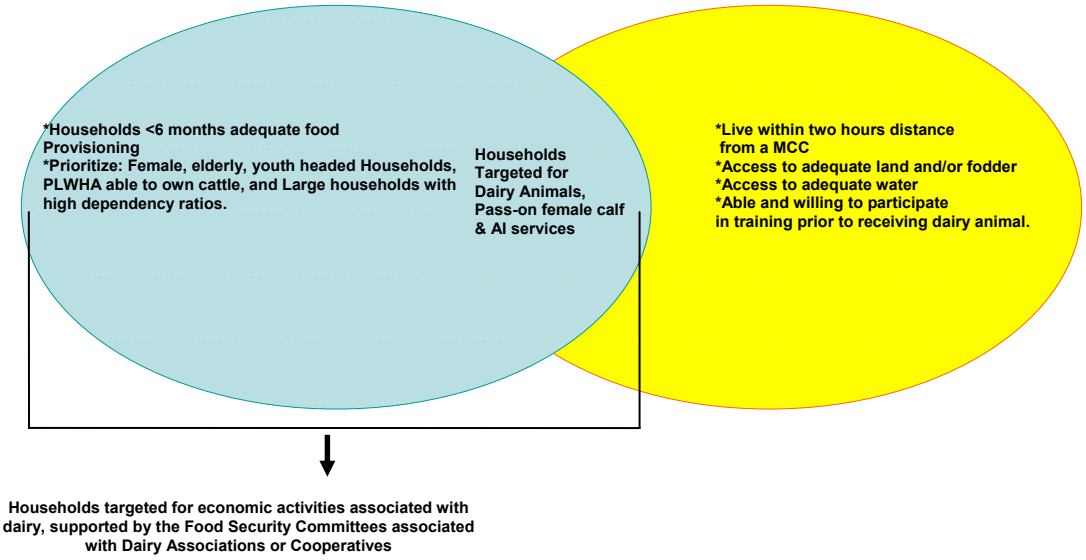
Figure 1: Land O'Lakes Zambia Title II Program Targeting Criteria



Additional households will be targeted for economic opportunities that support dairy activities within their community. These would be developed and targeted by the Food Security Committees associated with the dairy groups LOL/Z works with. These could include, but not be limited to activities such as fodder collection, employment by MCCs, milking, etc. These households are indirect beneficiaries of the program.

C. Households targeted for economic opportunities that support dairy activities must fit the following criteria:

- All households targeted must have on average less than six months of adequate household food provisioning
- Priority will be given to households meeting the following vulnerability criteria: (a) female headed households, (b) elderly or child headed households, (c) PLWHA who are well enough to own and manage dairy cattle (taking ARTs and following nutritional guidelines, participating or have participated in a care and support program), and (d) large households with high dependency ratios.

Thus, LOL/Z will make a special effort to ensure that food insecure and vulnerable households that are not eligible to receive dairy cattle are also targeted for livelihood improvement interventions (as indicated in the Venn diagram).

4.1.2 Prioritizing Vulnerable Households

In efforts to target vulnerable households, LOL/Z will prioritize vulnerable households such as: (a) female headed households, (b) elderly or youth headed households, (c) PLWHA, and (d) large households with high dependency ratios. LOL/Z recognizes

that there is a trend within Zambia of large households with high dependency ratios, which is partly due to the PLWHA, orphans and elderly women who go to live with other households. This results in few productive household members supporting large numbers who are not productive. These households may have higher incomes and may be more productive, but due to the many people they must support, they must produce more than they would otherwise. Some reports indicate that households with the highest dependency ratios were the most vulnerable because they had to produce more to support more people. Thus, large households are prioritized in the targeting criteria.

In addition, LOL/Z will prioritize selection of certain kinds of vulnerable people such as female, elderly and youth headed households and households affected and infected by HIV/AIDS. It is found that female, elderly and youth headed households often result from the loss of household member(s) to HIV/AIDS. In such cases, women are left widowed, children are orphaned and elderly grandparents end up caring for and managing the household. This is often more work than they can handle. Sometimes older children are left to take care of the household, which deprives them of an education and better opportunities. Hence targeting these kinds of households is relevant to the program since so many households are affected and infected with HIV/AIDS. More discussion on how LOL/Z intends to integrate HIV/AIDS activities and gender considerations into the program is below.

4.2. INCREASING PRODUCTIVE ASSETS

Goal: Increased incomes from improved agricultural productivity

With the household being its primary unit of programming, LOL/Z seeks to address vulnerability at the household level. This will be accomplished by increasing household access to food through improved income. Financial access means that households can, at all times, afford the food they require. Households can access food in several ways including: own production, purchases, bartering, loans and gifts. Access via purchases paid out of household revenues means that households must access an adequate source of revenue. Thus by raising the households' incomes, LOL/Z gives them a stable avenue for accessing food, especially since most rural households do not produce enough staple food to sustain them until the next harvest in any given year.

The activities being implemented by the program to increase food access are centered on dairy development, including training in various components of dairy production and management, distribution of dairy animals, establishment of Milk Collection Centers (MCCs) through which farmers can have a stable market to sell their milk, utilization of an artificial insemination program for dairy animals, and development of market linkages. Of course, household access to milk and availability of milk at the community level is also increased. Details of these activities can be found in the LOL/Z program documentation.

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The program realizes that not every member of a participating community can be involved in dairy activities. Hence the dairy program will be limited to a specific number of vulnerable households within selected associations who meet the program's food insecurity targeting criteria. By implementing the dairy activities mentioned, the program will in essence be improving the households' *asset base*. The assets being enhanced are human, physical, financial, social and natural capital.

4.2.1 Human capital

Human Capital represents the skills and knowledge that enable people to pursue their livelihood strategies and achieve their livelihood objectives. LOL/Z builds on this asset through training sessions offered to farmers in cooperative development and various areas of dairy production. At the association level LOL/Z will assist with the establishment of Food Security Committees (FSCs) which will be empowered with the necessary knowledge to enable them to draw up food security plans of action based on an assessment of food security risks and vulnerabilities in the community.

4.2.2. Physical Capital

Physical Capital comprises the basic infrastructure and producer goods needed to support livelihoods. LOL/Z's support to the accumulation of this asset is through the establishment of Milk Collection Centers through which dairy farmers deliver and bulk their milk for marketing.

4.2.3 Financial Capital

This asset denotes the fiscal resources that people use to achieve their livelihood objectives. LOL/Z's support to the build up of this asset is through the provision of dairy animals, milk bulking tanks to MCCs and milk cans meant to help improve the productivity of smallholder farmers. Assistance is also given to MCCs in the development of formal market linkages with dairy processors who provide farmers with a long-term stable and reliable market for their milk.

4.2.4 Social Capital

This refers to the social resources and networks upon which people draw in pursuit of their livelihood objectives. Distribution of dairy animals has the immediate effect of improving the social capital of farmer association members by increasing the stature and image of individuals due to ownership of a cow. LOL/Z will also seek to impart management and leadership skills to program beneficiaries through its cooperative development component. Establishment of associations will also lead to economies of scale as members pool their resources to purchase inputs and effectively market milk. External links to other service providers will also be facilitated by LOL/Z.

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4.2.5 Natural Capital

LOL/Z endeavors to include natural resource management in all its program activities with the beneficiary farmers. Specifically, LOL/Z will promote environmentally responsible and economically beneficial practices to producer groups with corresponding efforts made to evaluate the impact of the practices. For instance, LOL/Z will provide training and support that include zero grazing, semi-zero grazing and pasture management.

4.3. CAPACITY BUILDING FOR FOOD SECURITY

Goal: Improved community capacity to enhance food security

Building on the effectiveness that enhancing social capital can have on reducing food insecurity, the program intends to go a step further and address food security through improving communities' ability to use their asset base productively. The extent to which households can have access to these assets is strongly influenced by their vulnerability to shocks/risks (e.g. drought) and seasonality (e.g. of milk production). The building of capacity is thus meant to protect and enhance food security, reduce risks and decrease households' vulnerability. The program's focus is therefore to build the poor's capacity by enhancing people's ability to utilize their assets productively and empower them to develop and use local food security frameworks to determine their own food security needs. These activities will be implemented through FSCs to be formed at the farmer association level.

4.3.1 Food Security Committees (FSCs)

Using Africare's FSC as the model, LOL/Z endeavors to promote FSCs in the program in order to address food security of aspect of the program. Africare has been using FSCs for about seven years to enhance local capacities. The FSCs consist of village group leaders and traditional leaders, who are responsible for their community's food security action plans. In other words, FSCs monitor and improve the food security of their community by building local capacities.

> Objectives for capacity building at [the group] level lie with increasing abilities in planning, M&E, communication, mobilization (particularly of support and participation) and development and use of a local food security framework, thereby raising capacities to promote linkages between different project activities and food security.[9]

Similarly, LOL/Z's FSCs will also aim to build local capacities to address community food security situation. With LOL/Z's support and technical assistance, FSCs can improve the overall community food security situation through participatory learning

[9] Suzanne Gervais. Local Capacity Building in Title II Food Security Projects: a Framework. Occasional Papers No. 3. (USAID FFP, Washington, DC: February 2003) 12.

activities (PLAs) such as food security calendars, Venn diagrams, problem identification and analysis and community action planning, which empower the committee members to understand, identify, articulate and communicate community needs and demands in seeking assistance within and outside of the community.

In many Title II projects, FSCs or similar entities are the entry point into the community and, hence are responsible for the community's food security action plan. However, LOL/Z, being a dairy development program, has its entry point as the dairy producer association. LOL/Z's FSC will thus be integrated into the Association as a subcommittee. LOL/Z will take an active role in the formation and functioning of the FSC to ensure that the program's dairy and food security objectives are met. The reasons of having the FSCs within the associations are two-fold:

1. To enable direct economic services (e.g. grass cutting to gather fodder) centered around dairy production, that can benefit non-participating households will be supported through and coordinated by LOL/Z; and
2. To channel food security oriented capacity building activities through the FSC;

LOL/Z will, through the FSC, provide technical assistance to help communities to:

- Conduct dairy and food needs assessments;
- Obtain and make effective use of information about the causes of food insecurity within their communities;
- Advocate for resources required to improve their communities' food security situations internally and externally; and
- Document and report on FSCs' activities.

4.3.1.1 Food security capacity building

The program's capacity building objective is to develop long term capacity of participant communities to implement community action plans meant to improve their food security situation. The program staff will work in collaboration with FSCs as they develop their action plans to accomplish this objective. This collaboration will include:

- Training committee members (both male and female) on leadership and communication skills and participatory learning activities (PLA) techniques;
- Supporting the FSCs in the implementation of these activities in terms of processes and organizational structures;
- Supporting the farmer association/cooperatives' capacity to effectively use PLA techniques in determining the food security situation and the appropriate activities that can adequately address the community's food security;
- Assisting in developing the leadership needed to guide and sustain the process of addressing the community's food security over the long term; and
- Monitoring and evaluating the FSCs' progress and impact on the community.

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4.3.1.2 Extending program benefits to non-participating households

The objective of this concept is to reach out to other vulnerable households in the community that are not direct program beneficiaries so that the program's food security impact is broadened beyond direct beneficiaries, thereby improving the food security situation for more people in the community. The FSC will, among other things, be responsible for the development of technically and economically appropriate activities that can effectively address the food security problems of the community, while targeting food insecure households not participating in the program. This idea is derived from the premise that even at rural smallholder level the dairy industry offers many economic opportunities that can be harnessed by people who are not dairy farmers irrespective of their economic status.

The FSC members will be trained to identify demand-driven economic goods and services required for the efficient operation of dairy activities at both farmer and association levels that can be provided by poor households of the community. In order to identify the types of goods/services that can be promoted by these committees, LOL/Z will initiate dairy needs assessment workshops in each program area that will address dairy and food security issues. At the end of the workshop, a preliminary annual community action plan will be drawn up in response to the needs assessment by the FSC members. Performance monitoring of the FSC will be conducted monthly to ensure compliance with their mandate (which includes the needs assessments and community action plan). LOL/Z will also be conducting additional training sessions for the FSC members to guarantee effective delivery of this service.

4.4. LIVESTOCK AS A COPING MECHANISM

Goal: To promote community resilience to food security shocks

Rainfall performance remains the major determinant of crop output in Zambia. Thus the drought years of 1991/92, 1994/95, 1997/98, 2000/01, 2001/02 and, most recently, 2004/05 have consistently resulted in a reduction in the production of the country's staple crops, particularly in rural areas where household crop production is the main source of food[10]. When faced with such natural disasters, rural communities usually engage in coping strategies, such as the sale of productive assets that put their future food security situations at risk.

Given recurrent variations in rainfall, LOL/Z is essentially focused on promoting dairy production as a reliable coping mechanism for households that are vulnerable to natural and economic shocks. Through improved purchasing power resulting from milk sales, rural households are empowered to adequately access food through

[10]Zambia Vulnerability Assessment Committee, "2005 Vulnerability and Needs Assessment", (VAC, Lusaka, Zambia: June 2005) 8.

purchases, even when faced with natural disasters like droughts or floods. The incomes from dairy sales do not only ensure access to food, but hopefully will initiate savings and protect the productive asset itself, as the income will discourage farmers from selling their dairy animals when under stress or during a disaster period. In addition, the increased milk production in these households will increase the availability of milk for families as well as the community.

Protecting the dairy cow from disinvestment is an important message that LOL/Z will enforce. As part of this strategy, LOL/Z will work with the associations on the development of constructive actions that will continue to assist farmers to maintain their dairy cattle in the face of potential food security crises. Feed conservation and silage preparation are a few ways dairy farmers can cope during periods of low fodder availability. LOL/Z will provide training specifically to address the limited fodder availability during the dry season and droughts. During droughts, the milk production will be low so fodder conservation and silage preparation is essential for the survival of the dairy cow. During this current drought year, anecdotal evidence collected by LOL/Z appears to indicate that farmers who received dairy animals within the past year have held onto those animals. Dairy incomes have been sufficient to ensure adequate household food provisioning, negating the need to sell their cows.

5. FOOD SECURITY AS A RESPONSE TO HIV/AIDS

The HIV/AIDS pandemic has become increasingly linked with issues of food and nutrition. On the one hand, malnutrition and food insecurity may force households to integrate activities that increase their risk to HIV; while on the other hand, HIV/AIDS may worsen food insecurity. Hence, LOL/Z will also endeavor to make its food security program activities responsive to the HIV/AIDS environment by addressing the negative synergies that link HIV/AIDS and food insecurity. Specifically, LOL/Z will:

1. *Target HIV/AIDS affected households* – The program recognizes that elderly-, orphan- and female headed households and large households with high dependency ratios are usually a result of an AIDS related death. Such households often need to be protected through increased access to productive assets and adequate income. The program will thus categorize such households as vulnerable and make deliberate efforts to target them as program beneficiaries as long as they are willing and capable of participating in dairy activities. Those without the capability (for instance, due to poor health) will be recommended to our HIV/AIDS partners for HIV/AIDS related assistance.

2. *HIV/AIDS Awareness* - Efforts will be made to disseminate and provide information about HIV/AIDS via presentations at government clinics to bring about awareness in the community. This will be done through the incorporation of HIV/AIDS awareness campaigns as a crosscutting theme in LOL/Z's program

activities, particularly those focused on addressing food insecurity through FSCs. A variety of people are targeted to attend these HIV/AIDS awareness presentations, including beneficiaries, household members of beneficiaries, truck drivers and transporters of milk to MCC and/or the processor; however, such meetings are open to all members of the community who wish to attend as long as there is space.

3. *Nutrition Awareness* – The program will hire a nutritionist promote community dietary diversity by having nutrition awareness presentations at the association level. Nutrition awareness activities will include information on how to eat a diverse diet, especially for children aged 6-23 months (key growing period). However, it is difficult to exclusively target this age group, so the nutrition awareness campaign will focus generally on proper nutrition for children aged 6-59 months. Two things that should also be noted: 1) LOL/Z is not promoting milk consumption per se and 2) LOL/Z is not discouraging breast feeding among infants and young children under 24 months old, but encouraging beneficiaries to use the increased income gained from milk sales to improve the dietary diversity of young children as well as other vulnerable household members. Dairy products can be added to the diet at age 24 months when the child has generally stopped breastfeeding. In fact milk and dairy products are also beneficial for lactating mothers and pregnant women and people living with HIV/AIDS (PLWHA) to consume. Hence PLWHA, pregnant and lactating women, and women with young children aged 6-59 months are targeted; however, it is also open to the all members of the community who wish to attend such meetings as long as there is space. These awareness campaigns will be carried out in selected program areas.

6. GENDER DIMENSION OF FOOD SECURITY

One overarching objective of the program is to ensure that men and women participate in project activities and receive benefits on an equitable basis by creating the necessary enabling environment. The specific gender objectives are to: (i) ensure equitable participation by men and women in program activities; (ii) guarantee equitable access to productive resources for both men and women; (iii) create an enabling climate for women to play an effective and broad role in all program activities. The program will thus make a deliberate effort to ensure that program services reach a significant number of poor rural women and improve the food security situation of women who are heads of households and rural women in general. Specifically, the following considerations will be made:

- Ensure a minimum of 30% "active" female representation (including in decision-making roles) in all the farmer associations that the program works with;
- Where possible, the program will work with farmer associations that are predominantly female; and

- Involve both women and men in interviews and focus groups when food security data is collected.

7. MONITORING AND EVALUATION (M&E)

As part of the activities in this strategy and an integral part of the implementation plan, the M&E process will document and report on the progress and effects of the aforementioned activities above (see Appendix 1). Integrating specific food security activities into the current program demands additional indicators to monitor and evaluate program outcomes and impacts. New indicators are in addition to the program's existing food security indicator which is:

- Number of months of adequate food provisioning.

As mentioned earlier, this indicator will be used as targeting mechanism to select program beneficiaries. Per this strategy, the new indicators are: Household Dietary Diversity Index; Individual Dietary Diversity Index; and Cooperative Capacity Index. These activities are outcome and impact indicators that will assess our success in reducing *food insecurity among vulnerable populations*. The details about these additional indicators are as follows.

7.1 Household Dietary Diversity Index (impact)

In order to measure how households use the extra income from the milk sales, Land O'Lakes intends to collect data on HDDI because it proxy measure of household access to food as well as the socio-economic level of the household[11]. HDDI measures the number of different food groups consumed over a given time period[12]. According to this strategy, capacity building for food security, HDDI is an appropriate indicator to monitor if increased income level diversifies the household's diet, improves some health outcomes such as increases percentage of protein intake of animal sources, which is a high quality protein[13].

7.2 Individual Dietary Diversity Index (impact)

In an effort to measure the nutritional status of children age 6-59 months, Land O'Lakes proposes to measure IDDI. IDDI is a proxy measure of the nutritional quality of an individual's diet[14]. In the case of children, the types of food they consume will be different from the normal household food list. The assumption is that children eating a diverse diet are healthier than those who are not able to consume a number of different foods that contain protein and various kinds of vitamins and minerals. Since children's

[11] Ibid 2.
[12] Anne Swindale and Paula Bilinsky. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide. (FANTA, Washington, DC: March 2005) 1.
[13] Ibid 1-2.
[14] Ibid 2.

nutrition will be affected by other programs in the area, breastfeeding practices, other care and feeding practices, and increased access to food, this is an appropriate proxy indicator for nutritional status because it measures the different kind of foods children consume.

7.3 Producer Group Capacity Index (impact)

In order to measure the progress of Land O'Lakes' capacity building efforts, PGCI was adapted from the Institutional Development Framework used by Land O'Lakes and parts of Africare's Food Security Community Capacity Index (FSCCI), creating a comprehensive index that measures how well the group is doing as a group and how well the FSCs is doing as a committee in reaching the program's food security strategy objectives (see Appendix 2).

This integrated measurement reduces the level of subjectivity and provides a general idea of the degree to which program beneficiaries are recognizing improvements in their cooperative capacity and food security[15]. In other words, there is a sense of sustainability in building capacity of the beneficiaries and their communities. The capacities along with the variables in the PGCI should not be seen as program indicators, but rather as measurements of community capacity building.

The PGCI identifies organizational capacity areas, called resource characteristics. Each capacity area is further broken down into six key components as follows:

1. Oversight/Vision: board, mission, autonomy
2. Management Resources: leadership style, participatory management, management systems, planning, community participation, monitoring, evaluation
3. Human Resources: staff skills, staff development, organizational diversity
4. Financial Resources: financial management, financial vulnerability, financial solvency
5. External Resources: public relations, ability to work with local communities, ability to work with government bodies, ability to work with other organizations
6. Food Security Capacity: capacity of analysis, ability to take action, ability to manage risk and vulnerability, individual capacity, communication and exchange with outsiders

Each key component within a capacity area is rated at one of four stages along an organizational development continuum (1=start-up, 2=development,

[15] Africare. Food Security Community Capacity Index for Title II Programs. (Africare, Washington, DC: Feb 2005) 2.

APPENDIX A

3=expansion/consolidation, and 4= sustainability). General descriptions of Stages of Development are as follows:

1. Start-up: The group does not have expertise or knowledge in that capacity.
2. Development: The group has been introduced to this specific capacity or is starting to receive some training but adoption has not occurred or is very limited.
3. Expansion/Consolidation: The group has a good understanding of this specific capacity and received adequate training. Adoption is underway and significant progress has been made.
4. Sustainability: The group fully understands this capacity and has fully adopted training received. Moreover, group's activities ensure that this capacity continues after the completion of external interventions.

APPENDIX A

APPENDIX 1: Implementation Plan Summary

This implementation plan provides an outline of how the food security interventions designed to complement LOL/Z's Dairy Development Program will be executed. The food security strategy paper was designed to cover the food security aspect of the program. The paper is designed as guidance to LOL/Z field staff on how best to achieve food security in a dairy development program.

The plan has three main activities: *Food Security Committees, HIV/AIDS/Nutrition and monitoring and evaluation.*

Food Security Committees (FSCs)
In an effort to reach the wider community and better target the most vulnerable people, LOL/Z will assist associations to form and develop FSCs in their communities. LOL/Z believes that the FSCs will build capacity of the community to address their food security needs by training key members of the committee on specific participatory learning activities as described below.

- TOT Training
  - *Food Security Calendar* – This is a calendar that is specifically adapted to address food security issues. This activity introduces the idea of food security to the members in a calendar context since seasonality is an important issue in their livelihood. It provides perspective on who in the community belongs in the different wealth groups: poor, middle and rich, and how each group's food intake varies from season to season.

  - *Venn Diagram* – This is a map of social relationships rather than physical ones. It looks at how the community is organized, both in terms of internal organizations and its relationships with the larger community beyond its borders.[16] In this activity members will better understand the internal and external resources that are available to them. LOL/Z anticipates that this would be useful during the development of the community action plan when the members consider how they can obtain certain resources and/or seek assistance from influential persons or organizations in and outside their community.

  - *Problem Identification, Tree and Analysis* – These activities force members to identify their problems, visually place them in a tree that denotes causes and

[16] Suzanne Gevais, Judy Bryson and Karen SchoonmakerFreudenberger, "Africare Field Manual on Design, Implementation, Monitoring and Evaluation of Food Security Activities", (Africare, Washington, DC: 2003) 7.41.

effects and analyzes the tree in order to come up with possible solutions. The problem exercise provides members with an in-depth understanding of their problems by looking at the root causes and subsequent effects, in which they can directly address the problem in order to improve their food security situation.

- *Community Action Plan (CAP)* – In this activity, members make use of what they have learned from the former activities about food security, internal and external resources available in their communities, and their problems and possible solutions. At first members will need assistance in developing the CAP but later it will become an important part of their planning and decision-making process. LOL/Z intends to monitor the FSCs' CAP semi-annually.

- *Advanced TOT Training* - Advanced TOT training may be needed as the FSCs require and/or request more specific PLA and/or information that would enhance their understanding of their food security situation and assist the community in addressing it. For example, problem matrices, wealth ranking and gender analysis could be introduced.

HIVAIDS and Nutrition Awareness

Much of this work will be the responsibility of the new nutritionist and the field team. They will ensure that the households are targeted according to this strategy paper. Most importantly, they will organize the HIV/AIDS and nutrition awareness campaigns in selected program areas. LOL/Z will consult with LINKAGES project, who works exclusively on infant feeding, for the nutrition awareness campaign.

- *Target households who have been affected by an HIV/AIDS related illnesses or deaths*
  Very often households affected by HIV/AIDS must provide for the needs of many more people whose resource requirements are high. Providing cows to these households enables meeting these additional resource requirements through dairy incomes while also increasing household and community access to milk.

- *HIV/AIDS awareness*
  Efforts will be made to disseminate and provide information about HIV/AIDS via presentations at government clinics to bring about awareness in the community. This will be done through the incorporation of HIV/AIDS awareness as a crosscutting theme in its program activities.

- *Nutrition awareness*
  LOL/Z will hire a part-time nutritionist to present nutrition information in selected program locations by providing guidance on the benefits of a diverse diet in good nutrition. PLWHA, pregnant and lactating women, and women with young

children aged 6-59 months are targeted; however, it is also open to the all members of the community who wish to attend such meetings as long as there is space.

M&E

Regular monthly visits to all FSCs are necessary to monitor the FSCs' progress and better understand their needs and capacity to promote and integrate other participatory learning activities. The monthly visits will also give a chance for the FSCs to ask questions and learn new information.

The number of HIVAIDS and nutrition awareness sessions will be documented for management information system purposes because it is important to monitor the awareness campaigns to ensure that they are well targeted to people who can best make use of this information.

LOL/Z will also document lessons learned as part of the M&E process. Lesson learned are important part of evolving and improving the program through feedback from the stakeholders, especially from the FSCs and the groups. During the Mid-term Evaluation, a qualitative and quantitative survey will be the main instruments used to collect outcome and impact data of program beneficiaries. The survey will also obtain beneficiary stories that complement the indicators' values.

Through the ICB program LOL/US M&E technical support will provide assistance to LOL/Z staff in this endeavor as well as other M&E activities. Training and quality control will be provided to ensure that the highest quality data is obtained.

- Monthly Routine Visits to Monitor and Support Progress
- Lessons Learned
- Qualitative and Quantitative Survey during Mid-term and Final Evaluation

New Indicators

The total number of new indicators recommended according to this food security strategy paper is three; they are listed below (see discussion above for further reference). According to the recommendation from this Paper, changes to the IPTT will be required. The complete rationale for changes in the IPTT will be documented in Appendix C of the Results Report.

- Household Dietary Diversity Index
- Individual Dietary Diversity Index
- Dairy Cooperative Capacity Index

APPENDIX 2: PRODUCER GROUP CAPAITY INDEX

Producer Group Capacity Index
Producer Group:

Capacity	*Component*		*1: Startup*	*2: Development*	*3: Expansion*	*4: Sustainability*
1 Oversight/Vision	1 Board	1	Board partially identified.	Board membership stable, or Improving	Board fully identified	Board comprised of recognized leaders
		2	Roles of members and the board are unclear.	Board understands role and how to relate to members	Board assists cooperative through access to key	Board provides direction for community action
		3	Board not yet active	Board becoming active. Contributes and pursues resources.	Board provides some leadership and committees formed, but only one or two active members.	Significant funds raised by Board and many members of Board play active role.
		4	Board may obstruct the development of the cooperative	Board no longer a drag on cooperative	Board able to help advance cooperative, but chair not yet able to take to higher level.	Active Board, with strong Chairperson, appropriate expertise, and ability to create collaboration for the advancement of the cooperative
	2 Mission	1	No Mission Statement. Group coalesces around general objectives, such as a commitment to food security, environmental, health or development.	Mission Statement exists, but is unclear. Diverse portfolio of activities and proposals is not consistent with Mission Statement.	Mission Statement is clear and is generally consistent with portfolio. However, members are not uniformly capable of articulating the Mission Statement and outsiders may not identify it with the cooperative	Clear Mission Statement. It can be articulated by Board and members and is consistent with portfolio. Outsiders identify the same mission with the cooperative
	3 Autonomy	1	Board is dependent on implementing agents, donors, government, etc.	Board is able to respond to the interests of members	Board is able to obtain funding to support its program, in consultation with members.	In addition to managerial and financial autonomy, Board is independent, able to advocate to government and private sectors.
2 Management Resources	1 Leadership style	1	All leadership emanates from an individual	Leadership comes from few members and one or two Board members.	Vision increasingly comes from Board as Board members improve involvement.	All Board members have leadership roles and contribute to the development of leadership and development of the cooperative.

Producer Group Capacity Index
Producer Group:

Capacity	*Component*		*1: Startup*	*2: Development*	*3: Expansion*	*4: Sustainability*
2 Management Resources	1 Leadership style	2	Members provide technical input only.	One or two members and few Board members provide cooperative inputs, in addition to the Chairperson.	Members increasingly provide vital drive to cooperative	Cooperative would survive without current Chairperson of the Board.
	2 Participatory Management	1	Decisions made from Chairperson to the cooperative with little or no feedback. Other cooperative members do not participate in decision-making.	Most management decisions taken by Chairperson and Board. Some input from one or two members.	Management decisions increasingly delegated to appropriate Board members.	Management decisions delegated to appropriate level and members of the cooperative.
		2	Decisions handed down to cooperative from Chairperson with little or no feedback.	Management decision criteria generally shared with Board, but other cooperative members not included in process.	Decision-making is increasingly transparent to members, Around 50% of members participates in actual decisions.	Transparent decision-making process; Around 75% of members participates in the decision-making process.
		3	Members roles and responsibilities unclear and changeable.	Members roles better understood, but fragmented.	Members understand role in cooperative more clearly and how to participate in management.	Members increasingly able to shape the way in which they participate in
		4	Poor intra-member communications. Lack of formal and inefficient informal channels	Modest amounts of member communications. The emergence of formal channels for dialogue and decision making (such as member meetings)	Communications are open and inter-hierarchical. Formal and informal channels established and utilized	Cooperative periodically reviews communication flow to ensure free flow of information through both formal and informal channels
	3 Management Systems	1	No formal Cooperative/Association documentation (role descriptions, terms of tenure, election procedures, etc.) exists	Some, but not all necessary, Cooperative/Association documentation exists. Informal selection practices persist	Virtually all necessary Cooperative/Association documentations are institutionalized. Occasionally informal mechanisms are used	Formal Cooperative/Association documentations are institutionalized, understood by members and redress can be pursued
		2	No formal file system exists	Files are maintained, but are not comprehensive or systematic	Files are systematic, and accessible, but significant gaps remain	Files are comprehensive, systematic and accessible

Producer Group Capacity Index
Producer Group:

Capacity	*Component*		*1: Startup*	*2: Development*	*3: Expansion*	*4: Sustainability*
2 Management Resources	3 Management Systems	3	Operating without a By-law or formal registration	Registered and has by-laws but not understood by members	By-laws in place, although not up to date or considered the "Bible"	By-laws updated and understood by members, policy in place as needed. Considered the arbiter of procedures
	4 Planning	1	Planning does not exist or is predominately ad hoc and incremental.	Annual plans are developed and reviewed during course of year. Often not integrated into long term strategic plan.	Planning is expanded and more forward oriented, long term/strategic in nature and structured around Mission.	Based on Mission Statement, strategic plan development and annual plans continue as operative instruments with regular review of long term plans.
		2	Planning is top-down in orientation, Chairperson, and Board driven.	Members provide information for planning but members excluded from decision making.	The participation of members in planning is widened with limited contributions to decision making.	Members contribute to the entire planning process along with Chairperson and Board.
		3	Objectives set without assessment of resource requirements, nor consideration of environmental and important external factors.	Accomplishment of objectives tied to budget, but important environmental and external factors still overlooked.	Plans are based on budgets, and consideration of environmental and important external factors. But, cooperative does not review plan during implementation.	Annual and strategic plans are comprehensive and specific enough to permit accurate budgeting, and flexible enough to be modified as warranted.
		4	Cooperative does not produce Workplans and/or Business Plans	Workplans and/or Business Plans are drafted, but seldom used by Board and cooperative committee members.	Workplans and/or Business Plans are used periodically by the Board and cooperative committee members, but not viewed as dynamic instruments to be modified, as warranted.	Workplans and/or Business Plans are viewed as dynamic useful tools and are modified as required.
	5 Community Participation	1	Few or none community members participate in meetings.	Cooperative draws on community resources for advice and mobilization of their members.	Cooperative draws on external resources in planning, implementation and evaluation activities	Cooperative facilitates committee formation to include members of the community. Community members participate fully in planning, implementation, and evaluation.

Producer Group Capacity Index
Producer Group:

Capacity	*Component*		*1: Startup*	*2: Development*	*3: Expansion*	*4: Sustainability*
2 Management Resources	6 Monitoring and Evaluation	1	No formal evaluation mechanisms exist. Word of mouth and "gut" feelings are used.	Occasional evaluations are undertaken, usually at request of external regulatory bodies and implemented by outsiders.	Evaluation are initiated by members; members increasingly involved in their execution; some management decisions are taken based on data; M&E still isolated management function	Ongoing M&E system functioning and data analysis are integrated into decision-making.
		2	No feedback from members.	Informal channels for members feedback.	Formal mechanisms exist for members but only via surveys and evaluations Women and marginalized groups not included.	Continuous feedback and input from members where women and marginalized groups are clearly involved.
3 Financial Resources	1 Financial Management	1	Financial reports are unavailable or incomplete and difficult to understand. Cooperative often needs to be prodded to produce them.	Financial reports are clearer but still incomplete. Usually timely.	Financial reports are clear and complete.	Reports and data system can quickly provide a sense of financial health. Report are always timely and trusted.
		2	Budgets are not used as management tools.	Budgets are projected but not compared with actual figures	Projected Budgets are prepared but actual budgets have a variance of more than 20%.	Actual budgets are usually within 20% of budget
		3	No clear procedures exist for handling payables and receivables.	Clear procedures exist for handling payables and receivables but reconciliation is not implemented	Clear procedures exist for handling payables and receivables but reconciliation finds differences	Excellent controls for payables and receivables and established budget procedures.
		4	Audits are not performed.	Audits are only rarely performed per external demand.	Audits are performed frequently, but periodically.	Audits are performed with a regular, and appropriate, frequency.
	2 Financial Vulnerability	1	Financing comes from only one source or not available.	Financing comes from multiple sources, but 90% or more from one source.	No single source of funding provides more than 60% of funding.	No single source provides more than 40% of funding.

Producer Group Capacity Index

Producer Group:

Capacity	*Component*		*1: Startup*	*2: Development*	*3: Expansion*	*4: Sustainability*
3 Financial Resources	3 Financial Solvency	1	Resources are insufficient to implement action plans	Resources are available to cover short term cost/activities.	Resources are available for short-term actions and medium-term cost/activities.	All activities have long-term funding plans and current resources are adequate to implement actions plans.
4 External Resources	1 Public Relations	1	Cooperative little known outside the range of its community.	Cooperative is known in its own community, but does little to promote its activities to general public and key decision-makers.	Cooperative has contact with key decision makers and has developed some lines of communication with the community.	Cooperative and its work is well known to the community. Able to engage decision-makers in dialogue on community issues.
	2 Ability to work with local community	1	Viewed as "we", "they". Tension is frequent between cooperative and community.	Relations are friendly. Collaboration occasionally occurs on specific tasks and activates.	Collaboration is frequent, usually on informal level. Relations are friendly, but imbalanced.	Formal and informal mechanisms exist for collaboration and are often used. Relations are as full partners.
	3 Ability to work with government	1	Cooperative's activities have no relationship with local government, NGOs, and community for technical expertise and/or financial support.	Cooperative's activities get very limited support from local government, NGOs, and community for technical expertise and/or financial support.	Cooperative's activities draw significant support from local government, NGOs, and community but sustaining cooperative activities depends on continued support of the implementing organization	Cooperative's activities precipitate (create environment for) support from local government, NGOs and community as contributions to Cooperative's activities and for sustaining them.
		2	Cooperative does not have experience working with other cooperatives. Not known or trusted by other commodity associations.	Cooperative increasingly known and trusted by commodity associations, but little experience with collaboration.	Cooperative works with other cooperatives and commodity associations, and participates in cooperative networks but has not played a leadership role in promoting cooperative coalitions and projects.	Cooperative plays leadership role in promoting cooperative coalitions on projects and supports other cooperatives and can help resolve cooperative-cooperative or cooperative Govt conflict
	5 Ability to access external	1	No mechanism of negotiating for external assistance when required	Need identified for external assistance but no action taken	Actively negotiating for assistance from outside community	Requesting and receiving assistance from outside community when required

Producer Group Capacity Index

Producer Group:

Capacity	*Component*		*1: Startup*	*2: Development*	*3: Expansion*	*4: Sustainability*
5 Food Security Capacity	1 Capacity to analyze and plan	1	The group doesn't know any of the RRA and PRA techniques	The group can list some RRA and PRA techniques, but does not use them (being trained)	The group uses at least 1 RRA/PRA techniques on a semi-annual basis	The group uses at least 2 RRA/PRA techniques on a semi-annual basis
		2	Don't know their needs as a group	Able to list their needs but only in broad and not specific terms	Guided by external people /facilitators the group can assess its needs but forgets some important details	Group understands their needs well and presents precise and specific needs as part of a established process
		3	Total failure or inability of the group to explain their current Food Insecurity situation	Able to explain their Food Insecurity situation guided by external people /facilitators	Able to convey in problem identification and Food Insecurity situation analysis internally.	Can explicitly explain the group's Food Insecurity situation as part of a established process
		4	Group has no understanding of these concepts (Analyze, prioritize and develop solutions to problems)	Capacity to analyze situations, prioritize problems and develop solutions (received training)	Able to analyze, prioritize and develop solutions to problems with external assistance.	The group can analyze their present situation, prioritizing problems and develops many solutions as part of a established process
	2 Capacity to take action	1	The group doesn't have action plans	The group has been trained in elaborating action plans	The group has an action plan(s), and less than 50% of the plan(s) has/have been executed	The group clearly elaborate/explain plans of action, implement or and evaluate them and more than 80% of them have been executed as part of a established process
	3 Ability to analyze/manage risk and vulnerability	1	No evidence or understanding of the concept or role of the Food Security Committee	Roles and responsibilities of the Food Security Committee defined and understood by the producers group	Existence of a formal Food Security Committee, which meets quarterly to assess village's food security, risks, and vulnerabilities but no effective preventive actions to mitigate	Formal functional Food Security Committee operated by the group with monthly meetings to analyze situation and identify effective preventive actions to mitigate shocks, risks and vulnerabilities to enhance Food Security for the whole village

Producer Group Capacity Index

Producer Group:

Capacity	*Component*		*1: Startup*	*2: Development*	*3: Expansion*	*4: Sustainability*
5 Food Security Capacity	3 Ability to analyze/manage risk and vulnerability	2	No plan or knowledge of coping with risk	Capacity to plan mitigation procedures to cope with risk (trained)	Written plan exists with capacity to implement but no preparation in place	Annual review of all aspects of the plan and communicated to village
		3	No understanding about diversification of productive activities	Understanding of diversification of productive activities (Training)	At least 50% of households have diversified their productive activities	90% of households in the community have diversified their productive activities
	4 Individual capacity	1	No adult is literate in the group	One - three people in the group can read and write but record keeping is weak and problematic	One - three people are prepared and trained to keep accurate records of the cooperative activities	At least three people in the group can read and write and are keeping accurate records of the group activities and individuals are present who can handle
		2	No adult in the group has ever been trained	At least 10% of adults in the group have some training in a skill area needed to carry out the activities	At least 25% of adults in the group have some training in a skill area needed to carry out the activities	At least 50% of adults in the group have some training in a skill area needed to carry out the activities
		3	No adoption or initiation of any practices or technologies by community	25% of the members in the community adopted or initiated a practice or technology introduced in the group/village	50% of community members have adopted or initiated any practice or technology introduced in the group/village	All the participating members in the community have adopted or initiated one or all of the practices or technologies introduced in the group/village
	5 Communication and exchanges with outsiders	1	Unable to speak to outsiders about themselves and what they do	Rarely speak to outsiders about themselves and what they do	Can speak to outsiders and visit and invite other groups to share what they do	Most of the members of the group can perfectly and explicitly communicate and exchange information with outsiders
		2	No concept or knowledge about seeking or negotiating for external resources exist within the group	Group has been trained and developed an idea or seeking or negotiating for eternal resources but no	Group has developed at least one project from the action plan and has submitted to outside partners for funding/support	Good linkage with external resources. The group is already benefiting from self-initiated and negotiated external resources

APPENDIX A

GLOSSARY

Capacity Building
Enhancing an individual's, household's, or community's abilities to use their assets productively

Community
Group of individuals governed by the same traditional/political authority. It is the lowest administrative unit at which the program is operating

Household
Consisting of all members of one family who are related by blood, marriage, or adoption, including other persons, such as house-help or farm laborers, if any, who normally live together in one house or closely related premises and take their meals from the same kitchen and have one person they regard as the household head.

Farmer Association/Cooperative
A group of farmers organized in a group for development

Milk Collection Center
A facility that collects milk produced by smallholder farmers, generally owned collectively by a dairy producer association or cooperative that purchases milk from farmers. Milk is maintained in a cooling tank on-site until it is either sold to local residents or to a milk processor.

Smallholder Farmer
An individual involved in agricultural activities such as crop cultivation and/or animal husbandry who owns and/or has access to less than five hectares of land and/or less than five head of cattle.

Vulnerability
Inability to cope with a shock or hazard

APPENDIX B

Land O'Lakes/Zambia

Development Assistance Program

Findings of Preliminary Assessment

Prepared by Tadeyo Lungu and Sibeso Mululuma
Lusaka, Zambia

September 2005

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ACRONYMS AND ABBREVIATIONS

AI	Artificial Insemination
LOL/Z	Land O'Lakes/Zambia
M&E	Monitoring and Evaluation
MCC	Milk Collection Center
USAID	United States Agency for International Development
USD	United States Dollar
ZDEI	Zambia Dairy Enterprise Initiative
ZMK	Zambian Kwacha

APPENDIX B

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INTRODUCTION

Land O'Lakes has been working in Zambia since 2001, providing technical assistance to the dairy sector through funding provided by the United States Agency for International Development (USAID). Land O'Lakes/Zambia (LOL/Z) program is currently implementing a Title II Dairy Development Program, which started in March 2004 and will end September 2008.

The program currently works with 1,239 vulnerable[1] households who are grouped into farmer associations through which program assistance is given. Technical assistance includes training in various aspects of dairy production and food security, extension services, input provision (feeds, vet drugs, etc.), market linkages, stocking of dairy animals and artificial insemination for traditional animals. The program is currently in five districts in Southern Province, the part of the country that is most severely hit by the current and previous droughts. The people of Southern Province are predominantly agro-pastoralists, but many have over the years lost their animals to diseases that plagued the area throughout the 1990s. The districts LOL/Z works in are Mazabuka, Monze, Choma, Kalomo and Kazungula, all of which have been put on high food security alert for the period between now and the next harvest in May 2006. Monze has particularly been identified as being one of the neediest areas. [2]

The program also has new presence in two districts in the Copperbelt Province, which has been negatively affected by the closure of the country's copper mines. Program activities are also expected to be extended to food-insecure parts of Central Province during the coming fiscal year. The program also anticipates expanding to select districts in Eastern and Western Provinces.

Apart from dairy production, the program also gives support to initiatives promoting the storage and marketing of non-perishable commodities by small-scale farmers.

This paper provides an indicative overview of the preliminary impact the program is having so far on the food security situation of its program beneficiaries, particularly in light of the drought situation that Zambia is currently experiencing.

Figure 1 below shows program operational areas, indicating the ones where the program is already operational, the new districts where the program has just started and the districts where the program will operate in the future.

[1] The program's vulnerability status.
[2] FEWSNET Zambia Food Security Bulletin, August 2005.

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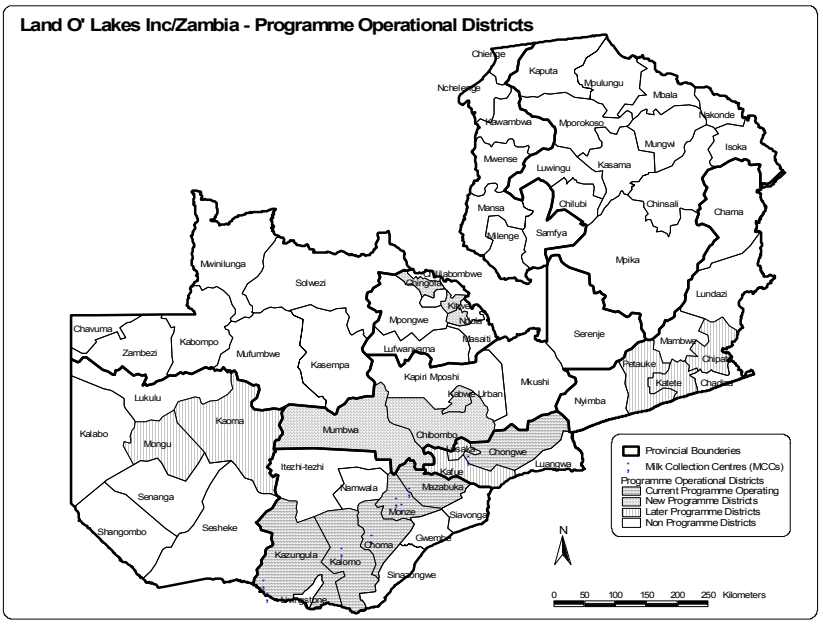
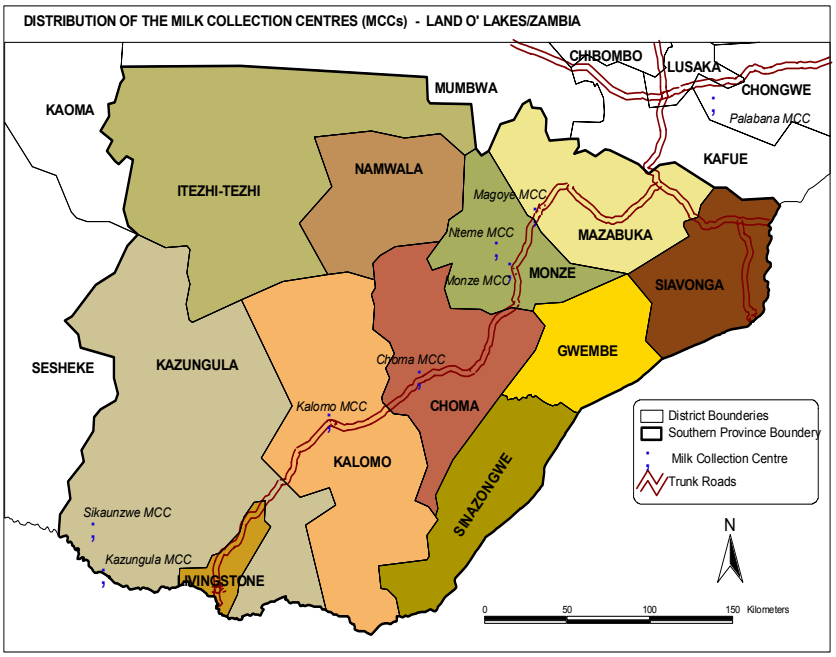
Figure 1: Operation Sites of the Program



This analysis focuses only on the first level of intervention, taking into consideration that a detailed Mid-term Evaluation will be carried out in April/May 2006 to cover all the levels of intervention. Therefore, when interpreting the results of this analysis, it is important to bear in mind that LOL/Z supports dairy development in other areas than the ones covered here.

Figure 2: Study Area and Distribution of the Selected Households.



APPENDIX B

RATIONALE

Rainfall performance remains the major determinant of crop output in Zambia. Hence, the drought experienced during the 2004/05 agricultural season, with the southern parts of the country receiving little or no rain during the entire planting season, has a negative impact on crop production, which is the main source of food for most rural households. The rainfall situation caused irreversible damage to maize fields, the country's main staple. An assessment by the Zambia Vulnerability Assessment Committee (ZVAC) established that 1,232,661 people in the southern half of the country were facing severe food shortages and would require approximately 118,335 metric tons of maize for eight months (July 2005 – February 2006).[3]

Land O'Lakes carried out a rapid assessment to determine how its program activities were enabling vulnerable households to cope with the effects of the drought. The goal of this preliminary assessment was to demonstrate the program's ability to improve food security and coping among the lowest income groups in Zambia. In order to assess whether or not the LOL/Z activities have already started to impact its beneficiaries, the assessment's objective was to provide indications of the estimated effect in the beneficiaries' incomes and livelihood as a result of the program's intervention. At the same time LOL/Z, in anticipation of the upcoming Mid-term Evaluation next year, is pilot testing the questionnaire instrument in advance because it was considered important to the staff's learning process in the arena of M&E.

METHODOLOGY

In order to obtain the best possible representation of our program areas, a sample of farmer beneficiaries from different operational areas of Southern Province were randomly selected using a simple random sampling computer application. A relatively smaller sample was selected due to time and budget constraints that would be associated with a larger, more representative sample. The areas covered included Sikaunzwe in Kazungula District, Simakakata in Kalomo District, Bwacha in Choma District, Kayuni and Ntheme in Monze District. The map below shows the program's current operational area and the distribution of the farmers that were selected and interviewed for this assessment.

A questionnaire was developed and administered to the 20 selected households in four districts. All these farmers were beneficiaries of the program in one way or another, and most importantly, these households had received at least one animal from the program.

The information gathered from this questionnaire included the following:

- Services received from LOL/Z program and the implementation status of these services received;
- Benefits accrued from the services received from the program;

[3] Vulnerability and Needs Assessment Report, ZVAC, June 2005.

- Monthly incomes for the households both before and after their participation in the LOL/Z program;
- The household food situation since beneficiaries started participating in the program; and
- Indirect benefits accrued by other vulnerable households not participating in the program.

FINDINGS

Levels of Adoptions for Different Technologies

In order to improve the total production and subsequently the incomes of the program beneficiaries, LOL/Z provides different services to vulnerable households with the aim of improving their food security situations through income derived from dairy production. Services provided by the program include training in record keeping, animal health and animal nutrition that include feed establishment and conservation. The program also has been training farmers in improved dairy management with the aim of encouraging farmers to view dairy as a business. To strengthen this point, the program has been assisting farmers in market linkages by establishing and supporting Milk Collection Centers (MCCs), in which vulnerable farmers access stable markets for their raw milk. It is envisaged that introduction of improved breeds and genetics (through artificial insemination) of cows will increase milk production, and as a result the incomes of farmers will increase. The program has also been empowering the beneficiaries with improved breed of animals through the stocking and artificial insemination (AI) sub-programs.

While the program technical staff is busy providing these services to the farmers, it is important to identify the adoption levels of these services. During the assessment, the farmers were asked to identify the services they received from LOL/Z and which of those they applied. The data indicates that all the farmers received most of the offered services. In some cases, farmers acknowledged receiving all of the services provided by the program such as AI and animal nutrition. The assessment also demonstrated that in most cases, the farmers adopted and applied most of the technologies taught to them by LOL/Z. Table 1 below indicates the number of farmers receiving the services and the percentage who adopted those particular services.

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Table 1: Number of Farmers Receiving the Services and their Adoption Levels of the Services

Services Offered By the Program[4]	Percent Received	Percent Applied	Percent Didn't Apply
Record Keeping	75	80	20
Animal Nutrition	100	95	5
Animal Health	70	93	7
Dairy Management	90	94	6
Calf Rearing	80	100	-
Milk Handling and Hygiene	80	88	13
Dairying as a business	75	93	7
Feed Establishment	90	72	28
Feed Conservation	95	89	11
Artificial Insemination	75	20	80
Stocking	100	100	-
Market Linkages	95	95	5

The table above indicates that the average adoption rate was about 84.9 percent. Almost all the households that received services in Animal Nutrition, Calf Rearing and Stocking reported to have adopted these services (95-100 percent). Apart from the questionnaire interview, the assessment team also physically verified some of these claimed adoptions during the interview process.

The respondents were also asked to indicate three main benefits that they felt were a direct result of receiving and applying the different services offered to them by LOL/Z. Of the top three responses given, 41 percent indicated that an increase in the household income levels resulting from the sales of the milk was the most beneficial effect after they applied the services and techniques rendered. The other responses pointed out that the services also resulted in the farmers practicing improved dairy management practices (35 percent). The third top response, 24 percent, expressed improved standard of life as a result of applying these services.

The farmers who reported that their standard of life improved explained that their food security situation improved as a result of the income they were accruing from the animals. Some expressed improved food security as being able to consume milk, or having additional nutritional food for their household members. One of the farmers claimed that he was able to buy a few new household assets, while most of them claimed the income from the milk helped them to pay school fees for their children.

[4] Total number of farmers who attended the training does not necessary adopt LOL/Z services. In the same manner, not all farmers who received the services apply them.

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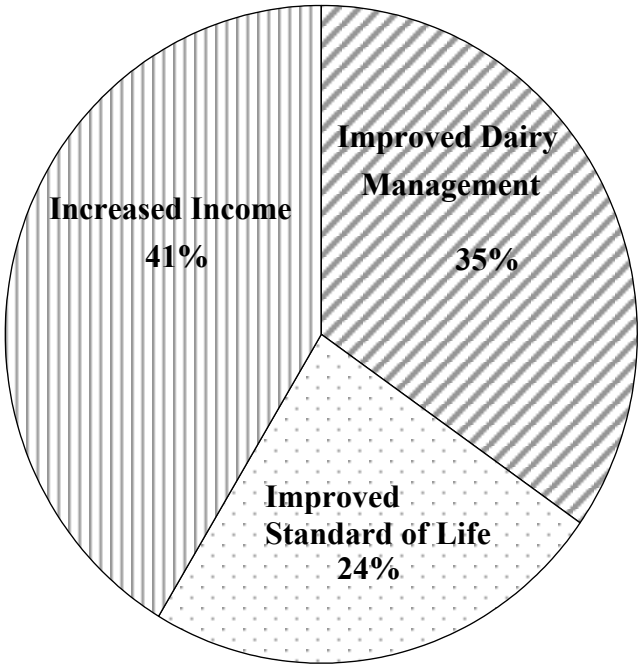
Figure 3 below shows the pie chart showing the share of the different benefits expressed by the beneficiary farmers as a result of the services they received.

Figure 3: Benefits Accrued From the Services Received from LOL/Z Program



Impact on Beneficiary Income

During the assessment, the beneficiary farmers were asked to recall the total monthly income before and after their participation in the LOL/Z program. The results of this assessment are presented in Table 2 below.

Table 2: Household Average Total Monthly Income and Dairy Income BEFORE and AFTER Intervention of LOL/Z Program.

MCC	BEFORE LOL/Z INTERVENTION				AFTER LOL/Z INTERVENTION			
	Total Income		Dairy Income		Total Income		Dairy Income	
	(ZMK)	(USD)	(ZMK)	(USD)	(ZMK)	(USD)	(ZMK)	(USD)
Kalomo	80,000	17.39	28,083	6.11	227,167	49.38	201,167	43.73
Monze	254,750	55.38	54,375	11.82	451,500	98.15	249,000	54.13
Choma	110,000	23.91	-	-	406,000	88.26	406,000	88.26
Sikaunzwe	67,125	14.59	17,500	3.80	197,500	42.93	175,000	38.04
Ntheme	124,000	26.96	-	-	278,500	60.54	182,250	39.62
Average	**124,194**	**27.00**	**25,333**	**5.51**	**296,000**	**64.35**	**226,639**	**49.27**

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The results demonstrate that these beneficiary households earned an average total monthly income of ZMK124,194.00 (USD27.00) and an average monthly income from dairy of ZMK25,333.00 (USD5.51) before they were involved in the LOL/Z program. The results also show that the same households earned an average total monthly income of ZMK296,000.00 (USD64.35) and an average monthly income from dairy of ZMK226,639.00 (USD49.27) after they were involved in the LOL/Z program. The monthly income from dairy **before** the household's involvement in the program represents 20 percent of the total monthly income. On the other hand, the data indicates that the monthly income from dairy **after** the household's involvement in the program represents 77 percent of the total monthly income. The gross incomes of the households in this assessment have more than doubled after the households participated in the program. Though the incomes given above are gross income, it is likely that these farmers are now making significant profits since the input costs are believed to be low. The main costs incurred by the farmers include feed and water conservation which normally are collected by the farmers themselves.

Given the above results, it appears that the reported increase in the total household monthly income from USD27.00 before the program to USD64.35 after the program would be attributed to the income derived from the milk. Most of the income reported before the program was coming from crop cultivation as opposed to dairy activities. Given the fact that the program area experienced bad weather last season and consequent crop failure this season, little income was reported by the households to be coming from sources other than dairy. This explains why the income from dairy was reported to have a higher contribution (77 percent) to the current total monthly household income.

It is worthwhile to note again that all the respondents to this assessment were beneficiaries of the improved cattle distributed by the program. According to the program policy, all cows distributed to these farmers are either in-calf with few months to delivery or already lactating animals with few days left in their lactating period. As indicated in Table 2 above, the households in Choma and Ntheme MCCs reported no income coming from dairy activities before the program intervention. However after the intervention, the same households reported a higher monthly total income, of which most (all of it for Choma MCC) came from the dairy activities. These households would have reported low income levels had there been no intervention of this kind.

Impact on Food Security

The program distributed 204 dairy animals to vulnerable[5] households during FY 2005. This is expected to impact the beneficiaries in two ways: (i) the increased access to food via a stable source of income as a result of milk sales; and (ii) the increased milk production would ensure milk availability for home consumption.

[5] Vulnerability context is determined using the program's food security indicators

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Patricia in front of a heap of maize stalks from her maize field.

Florence's Joy

Florence Himuzila is a member of the farmer association affiliated with LOL/Z program in Kalomo District. Before becoming a member of this association, Florence's only hope during the drought season was food relief from food aid organizations. As soon as she received a pregnant heifer from LOL/Z in July 2005, Florence's household food situation improved instantly as her cow gave birth and she was able to start delivering milk to the Milk Collection Center and receive a stable monthly income. "When I received my first income from the sale of milk, I bought a 25-kg bag of maize meal for my family, something I could never have done during this dire period," said Florence. "For the first time in many years, my family will not have to line up for food relief," she continued.

Spending of Dairy Income

In order to assess any possible impact of cattle distribution on the food security so far, the respondents were asked to provide the three most important areas where they direct their dairy income. This was an indirect way of assessing to what extent the households were using the incomes realized from dairy on food purchases.

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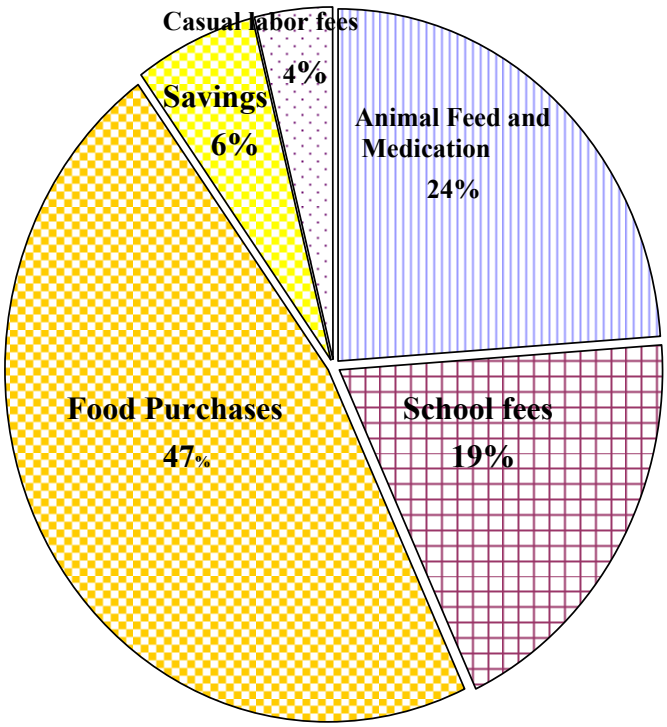
Figure 4: How the Extra Income from Dairy Is Spent



From the responses given, it was quite clear that the households have been using the money from dairy to purchase needed food for the household. Figure 4 shows a pie chart indicating the different ways in which the money from dairy is spent.

Specifically, 47 percent of the respondents indicated that the income from the milk was being spent on food purchases. This response was quite prominent especially for households that did not produce enough staple food stocks due to past and current droughts.

Bearing this in mind, the respondents were asked whether they were better able to cope with this year's drought as a result of their participation in the LOL/Z program. It was interesting to learn that apart from two households, who received the animals just a week before the assessment and didn't benefit from the milk sales yet, all the other households agreed that the program had substantially helped in one way or another.

The households cited different ways in which they felt the program helped them to cope with the drought situation. The majority of the households indicated that it was helpful to be able to use the income from the milk to purchase needed food during this dire period. Several households indicated that they were now able to consume the milk in the household, which was a good source of energy and protein for them.

One household mentioned that it was now able to pay the increased prices for food due to food shortages. In the past, the same household had problems coping with the high food prices that resulted from the food shortages in the area. During this season, it was able to easily meet the increased prices due to the extra income received from the sale of

milk. Another household indicated that they stopped selling livestock and household assets in exchange for money to buy food; instead they realized dairy production is better for creating income than their usual strategy that depleted their asset base.

The fact that the farmers now are able to purchase more food and pay school fees for their school-aged children from the dairy income indicates that the program is already showing some positive impact on the beneficiaries. In addition, a smaller number of the households interviewed were able to save for future investment and other businesses.

Wakwinji's Firsts

Wakwinji Aongola and his wife Rosemary are both blind. They look after eight children, three of whom are orphans. Before he received a dairy cow from LOL/Z, Wakwinji and his wife depended on charity from Catholic priests at a local parish for their household's daily food requirements. He received his cow in March 2005, and in June he received his first-ever income of USD$14 when he sold milk to the MCC. "Being able to feed my family from my own work, ahh! I feel like a real man now," says Wakwinji. In July his income from milk sales increased to USD33 and his family is able for the first time in his life to have two square meals a day. World Vision supplemented LOL/Z's efforts by buying Wakwinji a bicycle to enable him to transport his milk to the MCC. "Land O'Lakes is God-sent!" concluded Wakwinji.

Wakwinji's daughter preparing animal feed

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Benefits for Non-Program Participants

Indirect beneficiaries resulting from the interventions are another key measure of success for the LOL/Z activities in Zambia. An attempt was made to establish the extent to which households not participating in the program were benefiting from the program. The main benefit established was the provision of alternative economic services such as milking, grass cutting, delivering milk to MCCs, building of milking sheds and feeding of dairy animals. These services were in most instances found to be offered by beneficiary households to non-participating individuals for a reasonable fee.

For instance, 35 percent of the interviewed farmers stated that before LOL/Z intervention, their main source of income was casual labor, but since receiving dairy animals from LOL/Z, they were now able to employ others within the communities as explained above. On average, these laborers were paid between USD4.35 to USD21.74 per month. In addition to the money paid, the workers were also given milk as part of the payment.

The situation portrayed here shows that the program has enormous potential to create employment for other vulnerable households in the community who have not directly benefited in the distribution of the animals.

Patricia's Innovation

Despite the loss of her entire maize field due to poor rains, Patricia Moonga of Ntheme, Monze District, is able to feed her family from the sale of maize stalks to households that received animals from LOL/Z.

Patricia in front of a heap of maize stalks from her maize field.

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CONCLUSIONS

This preliminary assessment provided useful insights into how the program is helping vulnerable households reduce their food insecurity and cope with natural disasters like drought. Positive program impacts are expected to continue as the program expands and intensifies its activities and target more vulnerable households in other areas. The analysis has attempted to bring out this understanding through different approaches such as: (i) indicating the levels of adoption of different services and technologies; (ii) showing possible impact on the beneficiaries' income; (iii) the indirect benefits enjoyed by non-participating beneficiaries; and (iv) impact of cattle distribution on food security status of the households. This was only one aspect of the program's direct impact, but several other aspects could have contributed to the overall impact. If other aspects of the program were also taken into consideration, the overall benefit of LOL/Z's support to farmers would be greater than demonstrated in this analysis.

The results are encouraging, demonstrating that the program's activities have already started showing some positive impacts on its beneficiaries. It is implied that the program has strong potential to assist farmers in moving from being food insecure to enjoying food security throughout the year.

This assessment should be viewed as a starting point for continued work and support for dairy development programs. It is hoped that in-depth information that tells the story behind the numbers and words will continue to be documented on a regular basis to better inform its stakeholders of the program's progress and success.

The findings presented in this study should not be viewed as a definitive measurement of reduction of food insecurity among vulnerable farmers as a result of their participation in the program. The data in this assessment provides preliminary insights into the program impacts and outcomes. Also this assessment is a pilot test, testing the questionnaire instrument in preparation for the Mid-term Evaluation that will be carried out in April/May 2006.

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Title II Development Activity Program
TA No. FFP-A-00-04-00001-00

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PROPOSED REVISIONS TO THE INDICATOR PERFORMANCE TRACKING TABLE (IPTT) AND THEIR JUSTIFICATIONS

October 2005

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Goal (FFP/SO): REDUCED FOOD INSECURITY AMONG VULNERABLE POPULATIONS.

Indicator: G1 – Number of months of adequate household food provisioning (MAHFP)

Revision 1

New Sub-Indicators**: G1.a:** Increased number of months of adequate food provisioning of beneficiaries (at beneficiary level)

G1.b: Average number of months of adequate food provisioning of households with less than 6 MAHFP (at population level)

Justification:

In order to better report on this indicator, Land O'Lakes is splitting the indicator according to the different measuring levels, beneficiary and population. At the beneficiary level, Land O'Lakes will measure G1.a at Midterm and Final Evaluations; and at the population level, Land O'Lakes will measure G1.b during the Final Evaluation. Because the population of these evaluations is different, splitting the indicator into sub-indicators is practical and useful for reporting purposes.

Revision 2

Baseline figure is proposed to be revised accordingly to the sub-indicators:

G1.a: Baseline is not known because baseline data was conducted at the population level. Baseline figure at beneficiary level will be determined during Mid-term Evaluation.

G1.b: Baseline was corrected from 9.4 months to 3 months of adequate food provisioning of households below 6 MAHFP.

Justification:

First, an explanation about the re-analysis of the baseline data is required. According to the Baseline Report Summary,[1] the indicator was computed based on Question 4.12 of the questionnaire, which asked the household to give the worst off month in terms of household food availability. The respondent gave one month that they felt was the worst in the past twelve months. Since the respondent was required to provide one month instead of providing all the worse off months, this does not correctly provide us with the number of months of adequate household food provisioning.

On the other hand, there was also question 4.11 of the questionnaire (below), which asked the respondent three questions: (a) total number of meals per day in the past 12 months; (b) number of main meals per day in the past 12 months and (c) adequacy of quantity of the past 12 months. Data collected using these questions provide a closer measure to what the indicator wants to measure.

In terms of adequacy, Land O'Lakes looked at the Baseline Summary Report and found that the consultant defined an adequate diet consists of "3 meals per day, 2 of them being main meals."[2] Hence for this indicator, "adequate" will mean 3 meals per day, 2 of which are main meals. Based on this assessment, households will be considered having adequate food provisioning are those that fit the above meaning of "adequate."

[1] The baseline was conducted by Pia M. Chuzu in 2004.
[2] Pia M. Chuzu, Land O'Lakes Zambia Baseline Report Summary, (ZAPE: Lusaka, Zambia, Oct 2004) 12.

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4.11 Please indicate regularity of meals and adequacy during last 12 months

Meal regularity and adequacy	Month											
	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03	Jan 04	Feb 04	Mar 04	Apr 04	May 04	Jun 04	Jul 04
a. Total number of meals per day												
b. Number of main meals per day												
c. Adequacy of quantity 1=Adequate 2=Moderately adequate 3=Inadequate												

Based on this information, it was felt that answers to questions 4.11.a and 4.11.b would bring out the adequacy provisioning of the food more realistically than the other question. In order to come up with the value for G1, a similar approach proposed by Paula Bilinsky and Anne Swindale (March 2005) of FANTA in calculating the Months of Inadequate Food Provisioning (MIHFP) was applied. The first step was to calculate the ***variable*** Monthly Adequate Household Food Provisioning (MAHFP) for each household according to the new definition of "adequate," which represents the total number of months out of the past 12 months that the household was able to meet their food needs. This variable was calculated using the formula below:

$$MAHFP\ (0\text{-}12) = Sum\ (A + B + C + D + E + F + G + H + I + J + K + L)$$

Where A to L are the previous 12 months and are assigned 1 each if the household had "adequate" food provisioning and zero if they had less than 3 meals per day and/or less than 2 main meals per day or they did not fit the definition of 3 meals per day, 2 of them being main meals.

The second step was to calculate the average MAHFP ***indicator*** for the same sample population. The denominator included all the households that were interviewed and had complete data for all the past twelve months. Those households that did not have complete data for all the past twelve months were excluded from the analysis to avoid the seasonality effect. Therefore, G1 (as a general indicator) was finally calculated as shown in the formula below:

$$\mathbf{G\ 1} = \frac{Sum\ (MAHFP)}{Total\ Number\ of\ Households}$$

The baseline value listed on the IPTT submitted in November 2004 was not calculated in this manner recommended by FANTA. The original calculation assumed there was only one month as inadequate whereas reality showed that there is more than one month in a year of inadequate food provisioning. Thus, this method was utilized to reinterpret the original data collected during the baseline survey, and a new baseline value was

calculated as well as new sub-indicators that better reflect the program efforts. It was calculated that the new baseline value is 6.4 months or 6 months, which is considered the average of the total population.

Secondly, according to the in the Food Security Strategy Paper (FSSP) in Appendix A, Land O'Lakes will target households with less than 6 months of adequate food provisioning. Given this new targeting mechanism, the future beneficiary population of the program will be households with less than 6 months of adequate food provisioning (G1.a). Hence G1.a is based on this particular population. Since baseline data for this particular sub-indicator is measured at beneficiary level, baseline value is unknown but will be determined during Midterm Evaluation.

G1.b is also based on the re-analyzed baseline data. From the baseline data, it was found that households with less than 6 MAHFP had an average of 3 months of adequate food provisioning. Since Land O'Lakes is committed to working with households with less than 6 months of adequate food provisioning, this sub-indicator will provide the appropriate impact measurement at the end of the program.

Revision 3

Accordingly to Revision 1 and 2, there are two sub-indicators for G1 with specific population definitions. Since this is a new way of measuring and targeting this indicator for this kind of program, G1.a has a target for mid-term (FY 3) of 3 months and for LOA (FY 5) of 5 months increased of adequate food provisioning from a continuum of 0-6 months.

For G1.b, LOA target has been revised from 10.6 months to 6 months.

Justification:

Since Land O'Lakes will target households below 6 months of adequate household food provisioning, it is logical to measure beneficiary households for G1.a. However, G1.a mid-term and LOA targets were based on re-analyzed baseline data. According to the re-analyzed baseline data, the average number of months of adequate household food provisioning of households with less than 6 MAHFP is 3 months. Based on this information and the fact that this is a new way to measure and target for this kind of program, the mid-term target is set at 3 months increase on a 0-6 month continuum. The re-analysis also found that LOA target for the top tercile (as per FANTA recommendation), is 11 months. Hence, LOA target for G1.a is 5 months increase on a 0-6 month continuum because it is recognized that these households are at different levels between 0-6 MAHFP. For example, this means that an increase of 3 months at mid-term and then 5 months at LOA from 3 months and 6 months, respectively, would result in 6 months and then 11 months at the end of the program, respectively.

Alternatively, at the population level, G1.b, Land O'Lakes will endeavor to increase MAHFP of households with less than 6 MAHFP from an average of 3 months to 6 months by the end of the program.

Indicator: G2 – Percent of households having at least 3 meals a day

Revision 1

Remove G2 indicator from the IPTT.

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Justification:

After a discussion with Anne Swindale from FANTA regarding this indicator, she suggested removing it because it was not a meaningful food security indicator. Also the meaning of "meal" was not found to be well-trained and/or interpreted in the baseline data.

Indicator: G3 – Household Dietary Diversity Index (HDDI)

Revision 1

This is a new indicator per Food Security Strategy Paper.

Justification:

In order to measure how households have used the extra income from the milk sales, Land O'Lakes intends to use HDDI. HDDI measures the number of different food groups consumed over a given time period.[3] HDDI is a proxy measure of household access to food as well as the socio-economic level of the household.[4] According to the FSSP, capacity building for food security, HDDI is an appropriate indicator to monitor if increased income level diversifies the household's diet, improves some health outcomes such as increase in percentage of protein intake of animal sources, which is a high-quality protein.[5]

Baseline figures and targets will be determined for HDDI at the Mid-Term Evaluation.

Indicator: G4 – Individual Dietary Diversity Index (IDDI)

Revision 1

This is a new indicator per Food Security Strategy Paper.

Justification:

In an effort to measure the nutritional status of children age 6-59, Land O'Lakes proposes to measure IDDI. IDDI is a proxy measure of the nutritional quality of an individual's diet.[6] In the case of children, the types of food they consume will be different from the normal household food list. The assumption is that children eating a diverse diet are healthier than those who are not able to consume a number of different foods that contain protein and various kinds of vitamins and minerals. Since children's nutrition will be affected by other programs in the area, breastfeeding practices, other care and feeding practices, and increased access to food, this is an appropriate proxy indicator for nutritional status because it measures the different kind of foods children consume.

Baseline figures and targets will be determined for HDDI at the Mid-Term Evaluation.

Indicator: G5 – Producer Group Capacity Index (PGCI)

[3] Anne Swindale and Paula Bilinsky. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide. (FANTA, Washington, DC: March 2005) 1.
[4] Ibid 2.
[5] Ibid 1-2.
[6] Ibid 2.

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Revision 1

This is a new indicator per Food Security Strategy Paper. This indicator is an impact indicator at the beneficiary level because it measures the progress of beneficiary groups.

Justification:

In order to measure the progress of Land O'Lakes' capacity building efforts, PGCI was adapted from the Institutional Development Framework used by Land O'Lakes and parts of Africare's Food Security Community Capacity Index (FSCCI), creating a comprehensive index that measures how well the group is doing as a group and how well the FSCs is doing as a committee in reaching the program's food security strategy objectives.

This integrated measurement reduces the level of subjectivity and provides a general idea of the degree to which program beneficiaries are recognizing improvements in their cooperative capacity and food security.[7] In other words, there is a sense of sustainability in building capacity of the beneficiaries and their communities. The capacities along with the variables in the PGCI should not be seen as program indicators but rather as measurements of community capacity building.

The PGCI identifies organizational capacity areas, called resource characteristics. Each capacity area is further broken down into six key components as follows:

1. Oversight/Vision: board, mission, autonomy
2. Management Resources: leadership style, participatory management, management systems, planning, community participation, monitoring, evaluation
3. Human Resources: staff skills, staff development, organizational diversity
4. Financial Resources: financial management, financial vulnerability, financial solvency
5. External Resources: public relations, ability to work with local communities, ability to work with government bodies, ability to work with other organizations
6. Food Security Capacity: capacity of analysis, ability to take action, ability to manage risk and vulnerability, individual capacity, communication and exchange with outsiders

Each key component within a capacity area is rated at one of four stages along an organizational development continuum (1=start-up, 2=development, 3=expansion/ consolidation, and 4=sustainability). General descriptions of the Stages of Development are as follows:

1. Start-up: The group does not have expertise or knowledge in that capacity.
2. Development: The group has been introduced to this specific capacity or is starting to receive some training but adoption does not happen or is very limited.
3. Expansion/Consolidation: The group has a good understanding of this specific capacity and received adequate training. Adoption is under way and significant progress has been made.
4. Sustainability: The group fully understands this capacity and has fully adopted training received. Moreover, the group's activities ensure that this capacity continues after the intervention of external interventions.

[7] Africare. Food Security Community Capacity Index for Title II Programs. (Africare, Washington, DC: Feb 2005) 2.

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These descriptions are used to prepare the table that captures this information (see the Food Security Strategy Paper for the table of all the components). Based on the previous general descriptions, the table offers criteria describing each stage of development for each of the components, sub components and variables; for example, for "Food Security Capacity" and its subcomponent "Capacity to analyze and plan," descriptions of its stages of development are:

1. Start-up: The group doesn't know any of the RRA and PRA techniques.
2. Development: The group can list some RRA and PRA techniques, but does not use them (being trained).
3. Expansion/Consolidation: The group uses at least 1 RRA/PRA technique on a semi-annual basis.
4. Sustainability: The group uses at least 2 RRA/PRA techniques on a semi-annual basis.

Through discussion, the interviewer will use the ranking criteria to determine where along the development continuum their group/organization is situated for each component. Each key component is rated on a scale of 1 to 4, and all components are averaged together to provide a summary score for each capacity area and overall for the whole organization. This allows numeric targets to be set and monitored for each capacity area and an overall score for every group.

For an overall program score, each group (A-L) is interviewed, scored and averaged. The total averages are summed and then divided by the total number of groups interviewed.

$$\text{Program PGCI} = \text{Sum } (A + B + C + D + E + F + G + H + I + J + K + L)$$

$$\textbf{G5} = \frac{\text{Sum of average scores of all groups}}{\text{Total number of groups}}$$

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In terms of category definition of the ratings, the following will describe what it means to have scores 1, 2, 3 and 4.

- Score 1-1.99: Group is in the Start-up stage.
- Score 2-2.99: Group is in the Development stage.
- Score 3-3.50: Group is in the Consolidation stage.
- Score 3.51-4.00: Group is in the Sustainability stage.

Baseline is 0 because all new groups are in the start-up stage. Provisional target at mid-term (FY3) is 2 and LOA is 3. According to an initial pilot test of this indicator, the older groups are averaging 2.95, and newer and medium term groups are averaging 1.73. Hence the above provisional targets were established but will be revised at mid-term to reflect more representative targets for the Final Evaluation.

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STRATEGIC OBJECTIVE: INCREASED INCOMES FOR SMALLHOLDER FARMERS:

Indicator: SO 1 – Increase in average household income from dairy sales.

Revision 1

The baseline figure for this indicator is proposed to be revised from $680 per annum per farmer to $578 per annum per farmer.

Justification:

This indicator is related to the IR. 1.1, which is "Increase in average volume of milk produced by smallholder farmers" with a baseline figure of 2,750 liters per annum per farmer. According to the data from the last phase of the program, the average price to the farmer during the program period was $0.21 per liter. It is also reported that this price was more less the same throughout the period, though in Zambian Kwacha terms some fluctuations were observed. Taking this price into consideration, the household income from dairy sales is therefore the average volume multiplied by the average price per liter (i.e., 2,750 liters multiplied by $0.21 = 578). Based on this information, the SO 1 is therefore proposed to be revised to $578 per annum per farmer.

Revision 2

The SO 1 mid-term and LOA figures are to be revised from the original $748 and $816 to $636 and $694 respectively.

Justification:

Once the baseline of SO 1 has been revised according to the above suggestion, the two targets would consequently need to be revised as well. The expected percent increases from the baseline to the mid-term and LOA targets (increase of 10% and 20%, respectively) would be maintained except that they would be applied on the new baseline figure. The targets are estimated with the assumption that the price per liter in USD terms will remain the same for the rest of the program life as it has been in the past. Therefore, the new targets for this indicator would be $636 at mid-term (FY 3) and $694 at the end of LOA (i.e. FY 5).

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INTERMEDIATE RESULT 1: INCREASED PRODUCTIVITY OF SMALLHOLDER DAIRY FARMERS:

Indicator: IR 1.1 – Increase in average volume of milk produced by smallholder farmers.

Revision 1

This indicator was initially phrased as "percent increase in average milk produced by smallholder farmers" and has been changed to read as above. Initially, the targets of this indicator were reported in percentages whilst the baseline was reported in absolute figures. The choice was to be made for the changes in the indicator to be reported either in absolute figures or percentage figures. The choice was to report the absolute figures and hence to replace the percent changes that were initially contained in the indicator.

The total volume of milk delivered to the MCCs amounting to 2,750 liters per annum per farmer was recorded as the Life of Activity (LOA) achievement of the previous dairy program administered by Land O'Lakes. This figure was used as a proxy to estimate the production of milk per annum per farmer. Therefore, this figure forms the baseline value for this indicator.

Justification:

Since the baseline is an absolute figure, it was only proper enough that the targets are also reported in absolute figures. Though the two reporting units could be derived one from the other, uniformity was important to be maintained. The absolute figures also give the first impression of how much actually has been achieved in terms of volume production per annum per farmer.

Revision 2

The proposed targets for this indicator are 2,888 liters and 3,025 liters per annum per farmer in FY 2 and FY 3, respectively. The targets for FY 4 and FY 5 (LOA targets as well) are 3,166 and 3,300 liters per annum per farmer, respectively. These volumes are to represent an expected increase of 5% in FY 2, 10% in FY 3, 15% in FY 4 and 20% in FY 5.

Justification:

The program aims to increase the productivity of a dairy animal from 4 to 12 liters per cow per day over the program LOA. This would enable a household to move significantly in the direction of achieving self-sufficiency, and thus, food security. The program is also intending to at least empower the farmers with an average of one improved cow per farmer. Given in a year, the lactating period of 275 days, then it is possible for the farmer to produce a total of 3,300 liters per annum. Based on the targeted yield rates to be achieved over a period of time, the corresponding volumes anticipated to result from these achieved volumes have been set for this indicator. The targets have been revised downwards so as to conform to the anticipated increase in the milk yields given by the animals.

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Indicator: IR 1.2 – Increase in average yield of dairy cattle (liters per cow per day).

Revision 1

The phrasing of the new indicator should read as "increase in average yield of dairy cattle (liters of milk per cow per day)" omitting the word "percentage" as it was reading originally.

Justification:

In this indicator, we are actually anticipating seeing change (increase) in the actual liters per cow per day rather than measuring the percentage change. Therefore, it is proposed to drop out the percentage so that the phrasing should correspond to the variable that we are anticipating to see the change in.

Indicator: IR 1.3 – Number of smallholder farmers owning improved dairy cattle.

Revision 1

Partial targets are proposed to be redefined while target at the end of the program remains. The targets for FY 3, FY 4 and FY 5 (LOA) are hereby being proposed to be revised as follows. Originally, it was expected to increase the number of smallholder farmers owning improved dairy cattle by 250 in each FY. This picture does not seem to be the same anymore. It is expected that in FY 3, the number will increase by 400, in FY 4 by 250 (same as before) and in FY 5 (LOA) by only 100. It is therefore suggested that the old targets are revised to take into account the present understanding of the program.

Justification:

During FY 3, the Land O'Lakes field technical staff will continue empowering the planned 250 farmers through distribution of the improved dairy cattle. In addition to this, Heifer Program International (HPI), the organization that has been sub-contracted by Land O'Lakes to distribute animals is expected to do the distribution of improved dairy cattle to another 150 households during the same fiscal year. Given this scenario, it is therefore expected that a total of 400 households will be empowered with improved dairy cattle during the year in reference. During FY 4, Land O'Lakes field technical staff will empower the planned 250 households with improved dairy cattle.

Since a higher-number-than-planned households will be empowered during FY 3, there is only 100 households that will need to be to be empowered during FY 5 in order to meet the target of 1,000 for the end of the program. Therefore, the number during FY 5 needs to be revised downwards from 250 to 100.

Revision 2

Originally, the targets for IR 1.3 were being indicated by the number of households being targeted for a particular FY. It is being proposed that rather than doing this, the cumulative targets need to be used over a period of time. This means that the targeted number of households for a particular FY will be added to the target of the previous FY to have the cumulative targets. The cumulative targets suggested are as follows:

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Table 1: Specific FY Targets and the Cumulative FY Targets for IR 1.3

FY	FY SPECIFIC TARGET	CUMULATIVE TARGET
FY 2	250	250
FY 3	400	650
FY 4	250	900
FY 5	100	1, 000
LOA		1, 000

Justification:

All the indicator targets are reported cumulatively rather than just for that particular FY. Therefore, the intention is to keep uniformity in the reporting system for all the indicators in the IPTT. This reporting system is also desired because it easily gives a quick picture of the progress towards the LOA.

Indicator: IR 1.4 – Number of smallholder farmers trained.

Revision 1

Partial targets are proposed to be redefined while the target at the end of the program remains. The targets for FY 3, FY 4 and FY 5 (LOA) are hereby being proposed to be revised as follows. Originally, it was expected to train a total number of 450 farmers during each fiscal year. This figure is being proposed to be revised to 600 farmers in FY2 and FY 3, 400 in FY 4 and 200 in FY 5 (LOA). The reasons for this proposal are given in the justification below.

Justification:

The field experience indicates that the number of farmers to be trained during the program implementation period would not be linear as earlier perceived. The reality on the ground is that more farmers will be trained in the earlier years and fewer towards the end. This indicator is directly related to IR 1.3 because it is the aim of the program to train all the farmers even before they get empowered by getting improved dairy animals.

Revision 2

Originally, the targets for IR 1.4 were being indicated by the number of households being targeted for a particular fiscal year. As with IR 1.3, it is being proposed that rather than doing this, the cumulative targets need to be developed over a period of time. This means that the targeted number of households to be trained for a particular FY will be added to the target of the previous FY, yielding the cumulative targets. The cumulative targets suggested are as follows:

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Table 2: Specific FY Targets and the Cumulative FY Targets for IR 1.4

FY	FY SPECIFIC TARGET	CUMULATIVE TARGET
FY 2	600	600
FY 3	600	1, 200
FY 4	400	1, 600
FY 5	200	1, 800
LOA		1, 800

Justification:

The intention is to keep uniformity in the reporting system for all the indicators in the IPTT. This reporting system is also desired because it easily gives a quick picture of the progress towards the LOA.

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INTERMEDIATE RESULT 2: IMPROVED PRODUCTIVITY OF THE DAIRY INDUSTRY:

Indicator: IR 2.1 – Gross average value of milk sold by milk collection centers.

Revision 1

This is an impact indicator that was initially meant to measure the performance of the MCCs based on the total gross value of the milk sold by the all the MCCs. Instead of looking at the total volume produced by all the MCCs, the indicator has now been revised to look at the gross average value of milk sold by the MCCs.

Justification:

The baseline of this indicator was the total gross values of ten MCCs that sold the milk during the last year of the previous Land O'Lakes program, the Zambia Dairy Enterprise Initiative (ZDEI). However, the number of MCCs that were functional and able to sell the milk during the year in question dropped to seven from the original ten. Therefore, it was difficult to compare the total gross values of milk from the two sets of MCCs, thereby giving an unclear picture of the performance of the MCCs. It has then been deemed useful to use the gross average values of the two sets of MCCs. The problem of comparing two sets of MCCs that contained unequal number of MCCs was seemed to be potentially a problem in future when the number of MCCs is expected to increase as the program open up in new areas.

Revision 1

The baseline figure is proposed to be set to $61,300 per annum per MCCs whilst that for the mid-term and LOA is set to $85,500 and $93,000 per annum per MCC respectively.

Justification:

Initially, a gross value of $778,000 was reported as a baseline figure for this indicator. On the other hand, the volume of milk reported to have been sold to realize this figure was 2,454,000 liters, giving the price of $0.32 per liter. This price contradicted with the actual price of $0.25 that according to the technical implementing team and other literature reported to have prevailed during the period when this value was reported. Therefore, an adjustment for the baseline had to be made by multiplying the price and the volume to get a more realistic gross value of the milk sold by the MCCs.

However, the targets of this indicator were set by multiplying the targeted volumes in IR 2.2 by $0.32 to get the corresponding values of these volumes. It is anticipated that the price of the milk sold by the MCCs will increase to that much.

Indicator: IR 2.2 – Average volume of milk sold by milk collection centers.

Revision 1

This indicator was not initially in the IPTT. A proposal is therefore being made to for it to be included in the IPTT. The proposed baseline figure for this indicator is 245,400 liters, which is the average liters sold per annum per MCC. This figure was computed from the total volume of 2,454,000 liters of milk that was sold from October 2003 to September 2004 by the ten MCCs that were supported by the program during this period. Since this indicator is directly linked to the volumes of milk produced by smallholder farmers (IR 1.1), it is anticipated that this indicator will change with the same proportions with IR 1.1 over the years. The proportion changes anticipated are therefore 5% in FY2, 10% in

FY3, 15% in FY 4 and 20% in FY5. Therefore, the proposed targets for this indicator are 257,700 liters in FY2; 269,900 liters in FY3; 282,200 in FY4 and 294,500 in FY5.

Justification:

Rather than just reporting only the gross average value sold by the MCC (IR 2.1), it has been found important to report on the average volume of milk sold by the MCCs. It is expected that this indicator would be helpful in assessing the performance of the MCCs.

Indicator: IR 2.3 – Number of smallholder farmers delivering milk to MCCs.

Revision 1

The targets for the indicator are proposed to be revised as follows: FY3 target to be revised from 1,100 to 1,250 farmers and that FY4 to be revised from 1,350 to 1,500 farmers.

Justification:

With the anticipated increase in the number of household owning improved cattle (IR 1.3) during FY3, there should also be an expectation to have a similar increase in the number of farmers delivering milk to the milk collection centers. This is the reason why the revision of IR1.3 above would also entail a corresponding revision with this indicator.

Indicator: IR 2.4 – Increase in volume of milk used by targeted processors to produce dairy products.

This indicator was initially referred to as IR 2.2.

Revision 1

The baseline figure for this indicator needs to be revised from 132,500 liters to 31,908,000 liters. The percent targets will remain as in the initial document, i.e.,10% in FY 2, 20% in FY 3, 25% in FY 4 and 30% in FY 05.

Justification:

During the planning meeting of the fourth quarter, it came to light that the initial baseline figure was not the total volume that the targeted processors used but rather the volume of milk that the processors purchased from MCCs currently working with the program (not all of them). The meeting acknowledged that the indicator was required for the purposes of monitoring the progress of the processor. The revision required getting the correct baseline figure from the processor.

Indicator: IR 2.5 – Increase in capacity utilization of targeted processors to produce dairy products.

Revision 1

This indicator was initially not in the IPTT and is therefore being proposed to be included in the document. Taking into consideration the baseline figure for IR 2.4 (31,908,000 liters per annum) and the installed capacity of all the processors of 329,000 liters per day, the baseline figure will be computed from these two figures. Once IR 2.4 is converted to a daily amount, then the capacity utilization is calculated based on the formula below:

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$$\textbf{IR 2.4} = \left(\frac{\text{IR 2.4}}{\text{total number of production days}}\right) / \textbf{(}\text{installed capacity}\textbf{)} \times 100$$

Given the figures currently at hand and substituting them into the above formula, the baseline figure for IR 2.4 is then computed as below:

IR 2.4 = (31,908,000 liters/365 days) / (329,000 liters per day) X 100

IR 2.4 = 26%.

The targets would then correspond to the expected change in the volume used by the targeted processors (i.e., IR 2.3). Therefore, the proposed targets for this indicator are to increase the utilization capacity from 26% at the baseline to 29% in FY2, 31% in FY3, 32% in FY4 and 34% in FY5.

Justification:

This indicator would also give good information as to what extent the capacity of the processors is being strengthened as a result of the assistance they are receiving from the program. The targets have been set with the same proportionate increase as in the IR 2.4 that is expected to directly influence the changes in this indicator.

Indicator: Percent increase in volume of milk sold by farmers.

Revision 1

This indicator was initially referred to as IR 2.4 and the proposal is to delete this indicator completely from the IPTT.

Justification:

It is felt that this indicator is a duplication of the IR 1.1. However, the data associated to this indicator will still be collected and reported in the management quarterly reports.

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INTERMEDIATE RESULT 3: IMPROVED STORAGE OF NON-PERISHABLE COMMODITIES

Indicator: IR 3.2 – Number of smallholder farmers trained.

This indicator was initially not in the IPTT.

Revision 1

It is proposed that the indicator is included in the IPTT with a baseline figure of "0" since no farmer was yet trained as a result of Land O'Lakes intervention at the start of this sub-component. Once this indicator is incorporated, the targets for FY2, FY3, FY4 and FY5 would be 2000, 3000, 4000 and 5000 respectively.

Justification:

Training is expected to influence a lot of smallholder farmers to join the warehouse receipt system. It is therefore to monitor this indicator to determine the performance of ZACA in its operations.

Indicator: IR 3.3 – Increase in quantity of commodities deposited in certified warehouses by smallholder farmers

This indicator was initially referred to as IR 3.2 and did not specify that it was referring to smallholder farmers.

Revision 1

The baseline figure is proposed to be reviewed to "0" whilst the FY2 figure to be reviewed from 50,000 MT to 5,000 MT; FY3 from 100,000 MT to 10,000 MT; FY4 from 150,000 MT to 15,000 MT; and FY5 from 200,000 MT to 20,000 MT.

Justification:

It came to light during the course of the year that the figures that were initially associated to this indicator were a combination of both smallholder and large-scale farmers. Since the program is intended to support only the smallholder farmers, it was important to review the figure just to incorporate the smallholders only.

Indicator: IR 3.4 – Number of warehouses certified.

This indicator was initially referred to as IR 3.3.

Revision 1

The baseline figure is to be changed from "4" to "0." The targets for FY2 and FY4 are to be changed from 4 and 8 to 3 and 9, respectively.

Justification:

Though the certified warehouses existed under ZACA, the certification was not as a result of the Land O'Lakes program intervention at that time. Hence there was no warehouse that was certified at the baseline as a result of Land O'Lakes implementation, and this is the reason why it here is being suggested to change this value to "0." Consequently, the other targets would also need to be revised to the above-suggested figures because they were calculated based on the wrong baseline figure.

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ANNEX 1: ORIGINAL INDICATOR PERFORMANCE TRACKING TABLE (IPTT)

ORIGINAL Indicator Performance Tracking Table (IPTT)																		
Indicator [8]	Base-line	FY 1 Target	FY 1 Achieved	FY 1 Achieved vs. Target	FY 2 Target *	FY 2 Achieved	FY 2 % Achieved vs. Target	FY 3 Target *(Mid-term)	FY 3 Achieved	FY 3 % Achieved vs. Target	FY 4 Target *	FY 4 Achieved	FY 4 % Achieved vs. Target	FY 5 Target *	FY 5 Achieved	FY 5 % Achieved vs. Target	LOA Target	LOA Achieved
Goal (FFP/SO): Food Insecurity Among Vulnerable Populations reduced																		
G1. Number of months of adequate staple provisions	9.4 Months							10.0 Months									10.6 Months	
G2. Percentage Increase in number of households having at least 3 meals a day	63%							73%									83%	
Strategic Objective: Increase incomes for smallholder farmers																		
SO1. Increase in average household income from dairy sales	$680 per annum per farmer							$748 per farmer per annum									$816 per farmer per annum	
SO2. Increase in average household income from warehousing system	0							5%									15%	

[8] See Performance Management Plan for details of each indicator.

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ORIGINAL Indicator Performance Tracking Table (IPTT)																	
Indicator [8]	Base-line	FY 1 Target	FY 1 Achieved	FY 1 Achieved vs. Target	FY 2 Target *	FY 2 Achieved	FY 2 % Achieved vs. Target	FY 3 Target *(Mid-term)	FY 3 Achieved	FY 3 % Achieved vs. Target	FY 4 Target *	FY 4 Achieved	FY 4 % Achieved vs. Target	FY 5 Target *	FY 5 Achieved	FY 5 % Achieved vs. Target	LOA Target	LOA Achieved
Intermediate Result 1 : Increased productivity of smallholder dairy farmers																		
IR1.1 Percentage Increase in average milk produced by smallholder farmers	2750 liters per annum per farmer				20%			30%			40%			50%			50%	
IR1.2 Percent Increase in average yield of dairy cattle (liters per cow per day)	4 liters per cow per day				6 Liters per cow per day			8 Liters per cow per day			10 Liters per cow per day			12 Liters per cow per day			12 Liters per cow per day	
IR1.3 Number of smallholder farmers owning improved dairy cattle	0				250			250			250			250			1000	
IR1.4 Number of smallholder farmers trained	0				450			450			450			450			1800	

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ORIGINAL Indicator Performance Tracking Table (IPTT)

Indicator [8]	Base-line	FY 1 Target	FY 1 Achieved	FY 1 Achieved vs. Target	FY 2 Target *	FY 2 Achieved	FY 2 % Achieved vs. Target	FY 3 Target *(Mid-term)	FY 3 Achieved	FY 3 % Achieved vs. Target	FY 4 Target *	FY 4 Achieved	FY 4 % Achieved vs. Target	FY 5 Target *	FY 5 Achieved	FY 5 % Achieved vs. Target	LOA Target	LOA Achieved
Intermediate Result 2: Improved Productivity of the Dairy Industry																		
IR2.1. Increase in value of milk sold by Milk Collection Centers	(000) 778 US$							(000) 855 US$						(000) 930 US$			(000) 930 US$	
IR2.2 Percentage Increase in volume of milk used by targeted Processors to produce dairy products	(000) 132.5 liters				10%			20%			25%			30%			30%	
IR2.3 Number of smallholder farmers delivering milk to MCCs	600				850			1100			1350			1600			1600	
IR 2.4 Percentage increase in volume of milk sold by farmers receiving technical assistance	2750 liters per farmer per year				20%			30%			40%			50%			50%	

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ORIGINAL Indicator Performance Tracking Table (IPTT)																	
Indicator [8]	Base-line	FY 1 Target	FY 1 Achieved	FY 1 Achieved vs. Target	FY 2 Target *	FY 2 Achieved	FY 2 % Achieved vs. Target	FY 3 Target *(Mid-term)	FY 3 Achieved	FY 3 % Achieved vs. Target	FY 4 Target *	FY 4 Achieved	FY 4 % Achieved vs. Target	FY 5 Target *	FY 5 Achieved	FY 5 % Achieved vs. Target	LOA Target	LOA Achieved
IR 3: Improved Storage of Non-perishable Commodities																		
IR3.1 Increase in commodity receipts used as collateral	0							35%									50%	
IR3.2 Increase in quantity of commodities deposited in certified warehouses	(000) 5 Mt				(000) 50 Mt			(000) 100			(000) 150			(000) 200			(000) 200	
IR3.3 Number of Warehouses certified	4				4			6			8			10			(10)	

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ANNEX 2: REVISED INDICATOR PERFORMANCE TRACKING TABLE (IPTT) WITH FY 2 RESULTS

Indicator [9]	Base-line	**FY 1** Target	**FY 1** Achieved	**FY 1** % Achieved vs. Target	**FY 2** Target	**FY 2** Achieved	**FY 2** % Achieved vs. Target	**FY 3** Target (Mid-term)	**FY 3** Achieved	**FY 3** % Achieved vs. Target	**FY 4** Target	**FY 4** Achieved	**FY 4** % Achieved vs. Target	**FY 5** Target	**FY 5** Achieved	**FY 5** % Achieved vs. Target	**LOA** Target	**LOA** Achieved
Goal (FFP/SO): Reduced Food Insecurity Among Vulnerable Populations																		
G1.a Increased number of months of adequate food provisioning of beneficiaries	TBD[10]							3 Months									5 months	
G1.b. Average number of months of adequate food provisioning of beneficiaries with less than 6 MAHFP	3 months																6 months	
G3. Household Dietary Diversity Index (HDDI)[11]	TBD							TBD									TBD	

[9] See Performance Management Plan for details of each indicator.
[10] As beneficiaries are targeted using criteria of "households under 6 months adequate food provisioning," a baseline figure will be determined at baseline.
[11] Since this is a new indicator, it will be determined at the Mid-Term Evaluation.

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Indicator [9]	Base-line	**FY 1** Target	**FY 1** Achieved	**FY 1** % Achieved vs. Target	**FY 2** Target	**FY 2** Achieved	**FY 2** % Achieved vs. Target	**FY 3** Target (Mid-term)	**FY 3** Achieved	**FY 3** % Achieved vs. Target	**FY 4** Target	**FY 4** Achieved	**FY 4** % Achieved vs. Target	**FY 5** Target	**FY 5** Achieved	**FY 5** % Achieved vs. Target	**LOA** Target	**LOA** Achieved
G4. Individual Dietary Diversity Index (IDDI)[12]	TBD							TBD									TBD	
G5. Average Producer Group Capacity Index (PGCI)[13]	0							2									3	
Strategic Objective: Increased Incomes for Smallholder Farmers																		
SO1. Increase in average household income from dairy sales	$578 per farmer per annum							$636 per farmer per annum						$694 per farmer per annum			$694 per farmer per annum	
SO2. Increase in average household income from warehousing system	0							5%						15%			15%	

[12] Since this is a new indicator, it will be determined at the Mid-term Evaluation.
[13] Scale rating and indicator is explained above.

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Indicator [9]	Base-line	**FY 1** Target	**FY 1** Achieved	**FY 1** % Achieved vs. Target	**FY 2** Target	**FY 2** Achieved	**FY 2** % Achieved vs. Target	**FY 3** Target (Mid-term)	**FY 3** Achieved	**FY 3** % Achieved vs. Target	**FY 4** Target	**FY 4** Achieved	**FY 4** % Achieved vs. Target	**FY 5** Target	**FY 5** Achieved	**FY 5** % Achieved vs. Target	**LOA** Target	**LOA** Achieved
Intermediate Result 1 : Increased Productivity of Smallholder Dairy Farmers																		
IR1.1 Increase in average Volume of milk produced by smallholder farmers	2, 750 liters per annum per farmer				2, 888 liters per annum per farmer	3, 038 liters per annum per farmer	**105%**	3, 025 liters per annum per farmer			3, 166 liters per annum per farmer			3, 300 liters per annum per farmer			3, 300 liters per annum per farmer	
R1.2 Increase in average yield of dairy cattle (liters per cow per day)	4 Liters per cow per day.				6 Liters per cow per day.	4 Liters per cow per day.	**67%**	8 Liters per cow per day.			10 Liters per cow per day.			12 Liters per cow per day.			12 Liters per cow per day.	
IR1.3 Number of smallholder farmers owning improved dairy cattle	0				250	204	**82%**	650			900			1,000			1,000	
IR1.4 Number of smallholder farmers trained	0				600	775	**129%**	1,200			1,600			1,800			1,800	

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Indicator [9]	Base-line	FY 1 Target	FY 1 Achieved	FY 1 % Achieved vs. Target	FY 2 Target	FY 2 Achieved	FY 2 % Achieved vs. Target	FY 3 Target (Mid-term)	FY 3 Achieved	FY 3 % Achieved vs. Target	FY 4 Target	FY 4 Achieved	FY 4 % Achieved vs. Target	FY 5 Target	FY 5 Achieved	FY 5 % Achieved vs. Target	LOA Target	LOA Achieved
Intermediate Result 2: Improved Productivity of the Dairy Industry																		
IR2.1. Gross average value of milk sold by Milk Collection Centers	61,300 US$ per annum per MCC							85,500 US$ per annum per MCC						93,000 US$ per annum per MCC			93,000 US$ per annum per MCC	
IR2.2. Average Volume of milk sold by Milk Collection Centers	245,400 Liters per annum per MCC				257,700 Liters per annum per MCC	202,800 Liters per annum per MCC	**79%**	269,900 Liters per annum per MCC			282,200 Liters per annum per MCC			294,500 Liters per annum per MCC			294,500 Liters per annum per MCC	
IR2.3 Number of smallholder farmers delivering milk to MCCs	600				850	744	**88%**	1,250			1,500			1,600			1,600	
IR2.4 Volume of milk used by targeted Processors to produce dairy products	(000) 31,908 Liters per annum				10% *((000) 35,099 Liters per annum)*	21% *((000) 38,583 Liters per annum)*	**210%**	20% *((000) 38,290 Liters per annum)*			25% *((000) 39,885 Liters per annum)*			30% *((000) 41,480 Liters per annum)*			30% *((000) 41,480 Liters per annum)*	
IR2.5 Capacity Utilization of targeted Processors to produce dairy products	26%				29%	32%	**110%**	31%			32%			34%			34%	

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Indicator [9]	Base-line	**FY 1** Target	**FY 1** Achieved	**FY 1** % Achieved vs. Target	**FY 2** Target	**FY 2** Achieved	**FY 2** % Achieved vs. Target	**FY 3** Target (Mid-term)	**FY 3** Achieved	**FY 3** % Achieved vs. Target	**FY 4** Target	**FY 4** Achieved	**FY 4** % Achieved vs. Target	**FY 5** Target	**FY 5** Achieved	**FY 5** % Achieved vs. Target	**LOA** Target	**LOA** Achieved
Intermediate Result 3: Improved Storage of Non-perishable Commodities																		
IR3.1 Increase in commodity receipts used as collateral	0							35%									50%	
IR3.2 Number of smallholder farmers trained	0				2,000	2,133	**107%**	3,000			4,000			5,000			5,000	
IR3.3 Increase in quantity of commodities deposited in certified warehouses by smallholder farmers	0 Mt				5,000 Mt	3,654 Mt	**73%**	10,000 Mt			15,000 Mt			20,000 Mt			20,000 Mt	
IR3.4 Number of Warehouses certified	0				3	5	**167%**	6			9			10			10	